



State of Ohio Environmental Protection Agency

Northwest District Office

North Dunbridge Road
Bowling Green, OH 43402-9398

TELE: (419) 352-8461 FAX: (419) 352-8468

Bob Taft, Governor
Christopher Jones, Director

October 18, 2002

Certified Mail 7001 0320 0002 8800 5741

Mr. Dave Curlis
National Specialty Products
200 North Town Street
Fostoria, Ohio 44830

Re: Notice of Deficiency
Amended Post-Closure Plan (GPRA Baseline)
National Specialty Products
OHD 004 167 219

RECEIVED

OCT 24 2002

Technical Support and Permit Section
Waste Management Division
Waste, Pesticides and Pollution Division
U.S. EPA - Region 5

Dear Mr. Curlis:

On July 19, 2001, Ohio EPA received from National Specialty Products (NSP) an amended post-closure plan for the former drum holding area located at 200 North Town Street, Fostoria, Ohio. The document is entitled *Amended Closure Plan for the Former Drum Holding Area at National Specialty Products* and was prepared by Bennett & Williams Environmental Consultants, Inc.

Ohio EPA's Division of Hazardous Waste Management (DHWM) and Division of Drinking and Ground Waters (DDAGW) have conducted a review of the above referenced post-closure plan and determined it to be deficient.

I have enclosed, as an attachment to this correspondence, detailed deficiency comments on the post-closure plan. Please provide a revised post-closure plan addressing all areas indicated in the deficiency comments. Ohio Administrative Code (OAC) rule 3745-66-18 requires that such a revised amended post-closure plan be submitted to the director of Ohio EPA for approval within thirty (30) days of the receipt of this letter.

The revised amended post-closure plan shall be prepared in accordance with the following editorial protocol or convention:

1. Old Language is over-struck, but not obliterated.
2. New Language is capitalized.
3. Page headers should indicate date of submission.
4. If significant changes are necessary, pages should be renumbered, table of contents revised and complete sections provided as required.

The revised amended post-closure plan should be submitted to: Ms Pamela Allen, Manager, Ohio EPA, Division of Hazardous Waste Management, Information Technologies & Technical Support Section, P. O. Box 1049; Columbus, Ohio 43216-1049. A copy should also be sent to Ms. Lynn Ackerson, Ohio EPA, Northwest District Office, Division of Hazardous Waste Management, 347 North Dunbridge Road, Bowling Green, Ohio 43402.



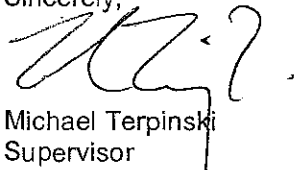
Mr. Dave Curlis
October 18, 2002
Page Two

Ohio EPA will, pursuant to OAC rule 3745-66-18, review the resubmitted plan and issue a final action approving or modifying the plan. Ohio EPA's final action on the resubmitted plan is appealable to the Environmental Review Appeals Commission.

If you wish to arrange a meeting to discuss your responses to this Notice of Deficiency, please contact Lynn Ackerson at (419)373-4113.

Ohio EPA, DHWM, strongly encourages you to consider pollution prevention options for any processes at your facility that generate waste. While implementation of pollution prevention options is not required by Ohio laws and regulations, the application of waste minimization practices may help reduce the expense of remedial activities. Additionally, implementation of pollution prevention options may prevent the creation of new units and as a result eliminate the requirement to submit a closure plan in the future. For assistance in identifying and implementing pollution prevention options, contact Colleen Weaver at (419)373-3059.

Sincerely,



Michael Terpinski
Supervisor
Division of Hazardous Waste Management

LA/cs

Enclosure

pc: Pamela Allen, DHWM, IT&TSS, CO
Harriet Croke, U.S. EPA, Region V
Ed Lim, DHWM, CO
George Stuckey, DDAGW, NWDO
DHWM, NWDO File

ec: Jennifer Rockhold, DHWM, CO
Lynn Ackerson, DHWM, NWDO

Attachment 1: DDAGW and DHWM Comments on the document entitled *Amended Closure Plan for the Former Drum Holding Area at National Specialty Products* dated July 20, 2001.

Background on comment and response:

- 05/21/02: Ohio EPA sent NSP a notice of deficiency (NOD) on their amended closure/post-closure plan. The letter stated that NSP should respond by 06/24/02.
- 06/18/02: Ohio EPA received written NOD responses from the facility within the requested time frame. Also, the facility requested an extension of time in order to meet with Ohio EPA to discuss the NOD comments and NSP's written responses.
- 07/09/02: As there is not a legal mechanism to allow for extensions, the request was denied and the facility was instructed to respond no later than 08/20/02.
- 08/14/02: Ohio EPA received a letter from the facility regarding a planned meeting date to discuss the NOD comments. Due to scheduling conflicts, the meeting could not be arranged until 08/29/02.
- 08/29/02: Ohio EPA met with the facility and its consultants to discuss the NOD comments.

Below, in regular type face, are Ohio EPA's initial comments and clarifications to the May 21, 2002, NOD which were discussed in the August 29, 2002, meeting. NSP's written responses to the NOD are in italic type face.

Subsection 1.1.1, Page 3: Description of Former Drum Holding Area

1. National Specialty Products must include waste code D040 for spent trichloroethylene (TCE).

The waste code D040 for spent trichloroethylene will be added to section 1.1.1, the description of the Former Drum Holding Area, page 3. The sentence will now read, "The contamination at the drum holding area is believed to be due to the accumulation of minor spills over time, rather than to large spills of spent TCE (waste code D040)."

Please note, however, that the alleged TCE in ground water, which was not detected during ground water monitoring at the FDHA, may be from the spill of approximately 600 gallons of off-spec TCE that was released in February 1985, which is not a D040 listed waste.

Ohio EPA acknowledges and approves the response to comment 1.

2. The TCE spill occurred in 1985. The date in the text must be changed.

The date will be changed to 1985 in section 3.2, Recovery and Treatment System, page 9.

The date in subsection 1.1.1, page 3, as well as section 3.2, must be changed to 1985.

Section 3.2, Page 9: Recovery and Treatment System

3. The TCE spill occurred in 1985. The date in the text must be changed.

The date will be changed to 1985 in section 4.1, Initial Ground Water Monitoring, page 12.

The date in subsection 1.1.1, page 3, as well as section 3.2, must be changed to 1985.

Subsection 4.1, page 12: Initial Ground Water Monitoring

4. The last sentence on page 12 states that "water levels at the former drum holding area will be measured twice a week until it is apparent that the natural gradient has been reestablished." It is likely that the natural gradients would return. However, NSP should provide an optional plan that would address representative ground water monitoring in the event that natural gradients do not return.

In this paragraph, "natural gradient" was used to mean ground-water flow that was no longer affected by pumping from recovery well DRW-1. When the pump in DRW-1 is turned off, there will not be a ground water sink centered at DRW-1, and the natural flow gradient will reestablish itself. Because the resulting ground-water flow gradient will be established by nature, there is no need for NSP to provide an optional plan that would address representative ground water monitoring in the event that natural gradients do not return, because the natural gradients must return.

Ohio EPA understands that "natural gradient" implies that ground water flow is not under the influence of the cone of depression created by the pumping of the recovery well DRW-1. To address representative ground water monitoring in the event that natural gradients do not return was meant to imply that the upgradient well DH-1, and downgradient wells DH-2, DH-3 and DH-4 were no longer in their relative upgradient and downgradient positions. The ground water's potentiometric surface may have changed its attitude since the cessation of monitoring because of additional construction on the north end of Building 72. This may have caused an additional loading of the soil profile and a loss of recharge in the southern periphery of the former drum holding area (FDHA). If there is a footer drain tile around the addition to Building 72, it may act to de-water the area near the FDHA and, therefore, change the potentiometric gradient. If this is the case, then an optional plan for representative ground water monitoring would be required which may include additional monitoring wells.

5. The second paragraph (top of page 13) should be revised to indicate that the initial sampling will not be performed for at least four weeks after the pumping from the recovery well has ceased. This will ensure that representative samples can be withdrawn from the monitoring wells.

While it is expected that the aquifer system will respond more quickly, the text will be revised to indicate that the initial sampling round will not occur until a minimum of four weeks has passed after the pumping from the recovery well has ceased.

It was agreed during the August 29, 2002, meeting that the initial round of sampling would not take place until the pump has been shut off for a minimum of six weeks.

Subsection 4.2, page 13: Closure Options

6. The third sentence (paraphrased) states, "The second option ... below the site action levels or MCLs ... subsequent sampling events." Site action levels should be determined. It is understood that the compound 1,1-Dichloroethane (1,1-DCA) does not have an established maximum contaminant level (MCL) and that a generic site action level should be developed. Action levels can be determined by performing additive risk analysis after each sampling event. This number would then be used with the other compounds' MCLs to determine if corrective action is necessary. An additive risk scenario would be used to determine if risk based clean closure is viable.

In current section 5.0 (Statistical Analyses), the statement is made that the generic ground-water single chemical clean up number of 1,1-Dichloroethane in ground water found in OEPA's Closure Plan Review Guidance for RCRA Facilities, Part II, will be used as its action level.

Ohio EPA's comment on response number 6 is included with comment number 8 below.

Subsection 4.2.2: Risk Based Clean Closure (page 14)

7. It is recommended that this subsection should be revised to incorporate the following risk based clean closure language.

If analytical results of the compliance ground water monitoring program under OAC rules 3745-54-90 through 3745-54-99 indicate concentrations above the analytical method detection limit for non-naturally occurring hazardous waste constituents, NSP must determine the rate and extent of ground water contamination in accordance with OAC rule 3745-54-91(A)(3). Rate and extent may need to be determined again since re-establishment of the natural gradient may have altered the plume geometry. The risk based clean closure standard must be met throughout the plume and not just at the compliance point or downgradient facility boundary.

In addition, the risk assessment (including additive risk) must consider all hazardous waste constituents identified in the ground water and must be calculated on a total cancer risk level of 1×10^{-5} and a total hazard index (non-carcinogenic) level of 1 for all affected and potentially affected environmental media (soil, ground water, surface water and air) and exposure pathways (ingestion, inhalation and dermal contact). The "clean" closure risk assessment scenario (the ground water pathway is one component of the entire risk assessment demonstration) assumes an unlimited residential use and must consider consumption and use of ground water in adults as well as children.

For risk based closure for non-naturally occurring constituents, at least twelve ground water data points must be collected, preferably over a one year period. If, as it has been shown historically, only one monitoring well at NSP displays any concentration of a non-naturally occurring constituent, then the highest concentration of any constituent in the well must be used when the risk assessment demonstration is performed. Resampling is permitted under OAC rule 3745-54-99(G) and the resampling protocols included in Section 5 – Statistical Analyses can be included in this section. After twelve data points have been collected, risk is calculated and if all results for the last four sampling events for the well are below the risk based limit (and the MCL) then risk shall have been met and ground water monitoring will no longer be required.

There has never been a ground water contamination plume associated with the FDHA. Only one compound of the COCs, 1,2-Dichloroethane, was ever detected in the FDHA monitoring wells, and it was detected at well DH-4 at concentrations ranging from "ND" (not detected) to 2.1 µg/L, all of which are below its MCL. The "NDs" were obtained in the last four quarters of sampling conducted at the FDHA (December 1994 to August 1995) prior to the start-up of the voluntary corrective measure. As such, the rate and extent of contamination at the FDHA has already been determined. However, because ground-water monitoring may resume, the data obtained through the future ground water monitoring program will be assessed to determine if changes to the rate and extent of contamination at the FDHA has occurred.

Because NSP's Fostoria facility is an operating manufacturing plant that has a demonstrated history of environmental releases (e.g., the TCE spill between building 72 and building 77, multiple permitted air sources and permitted surface water discharges), it is unreasonable to use all exposure pathways (i.e., soil, ground water surface water and air) at the NSP facility to determine risk from the Former Drum Holding Area. In addition, the ground-water pathway is incomplete, as the public water supply of the City of Fostoria is the drinking water source for the businesses and residences in the area surrounding the NSP facility. Also, because the facility is currently in operation, and because there are no plans to cease operations, an unrestricted residential use scenario is inappropriate.

A screening-level risk assessment will be completed for each sampling event by comparing the results of the laboratory analyses for the COCs with their respective MCLs or with the generic ground-water single chemical clean up number in ground water (for 1,1-Dichloroethane). The MCLs and the generic ground-water single chemical clean up numbers are conservative risk-based values based on an assumed risk of 10^{-6} . Assuming the worst-case from past sampling events (i.e., only one risk driver, 1,2-Dichloroethane, is present), a screening level risk assessment using the single chemical values is more conservative than the additive risk that uses a risk of 1×10^{-5} . If the screening level risk assessment indicates that the concentration(s) of COC(s) at the site is/are greater than the risk-based number(s), then a more detailed, cumulative risk assessment will be performed. Figure 4-1 – NSP Former Drum Holding Area Closure Decision Flowchart indicates that the risk based clean closure would be performed if significant concentrations of VOCs were not present. This figure will be revised to indicate that screening level risk assessment would be completed after each sampling event, and that a cumulative risk assessment will be performed to determine if risk-significant concentrations of COCs are present at the FDHA.

If the concentrations of the COCs are significant (i.e., above MCLs or the generic ground-water single chemical clean up number for 1,1-Dichloroethane), NSP will reimplement corrective action by returning the recovery well to service.

Based on the meeting held at OEPA's NWDO on May 22, 2001, there was a consensus that twelve data points were all that were required to properly perform the risk-based clean closure for the FDHA. Given that there are four monitoring wells and one recovery well, it was anticipated that three rounds of sampling would be conducted for a total of 12 data points (3 sampling rounds times 4 wells). In the last paragraph above, however, a reference is made to "the last four sampling events for the well," which implies that a larger number of sampling events is required. This becomes even more confusing when reading comment #8, below.

NSP's response fluctuates between 1,2-Dichloroethane and 1,1-Dichloroethane. It is Ohio EPA's understanding that 1,2-Dichloroethane is the constituent that was detected. Also, for clarification, Ohio EPA's generic ground-water single chemical clean up numbers are conservative risk-based values based on an assumed risk of 10^{-5} not 10^{-6} as indicated above. In addition, MCLs are not developed based on carcinogenic risk alone. MCLs are developed based on treatment technologies as well as other factors. Therefore, a screening level risk assessment using the single chemical values is not necessarily more conservative than the additive risk that uses a risk of 1×10^{-5} . Additional comments on this response are included with comment number 8 below.

8. NSP may use ground water sampling data as part of their risk based closure demonstration for risk based closure certification, if the following criteria are met:
 - a. NSP has completed at least twelve events of ground water monitoring over a one-year period.
 - b. These sampling events are concurrent and within the past calendar year.
 - c. The ground water monitoring has been conducted in compliance with the sampling schedule and parameter list required by either the regulations (OAC rules 3745-54-90 through 99) or the approved closure plan.
 - d. Ground water concentration values are documented to be below health based risk assessment standards.

As stated in our response to comment #7 above, it was expected that three rounds of sampling would be required to obtain the twelve data points necessary to demonstrate compliance with risk-based clean closure methodology. Comment #8 seems to require monthly ground-water sampling for a year or bimonthly sampling for six months, etc.

If monthly sampling is planned, point "b" indicates that the sampling must begin in January, as twelve sampling events must be conducted within the past calendar year. Because it is unclear what is meant by "These [twelve] sampling events are concurrent," we request that you clarify the required numbers of and the anticipated schedule for the sampling events that are to be conducted at the FDHA, and what is meant by "concurrent."

All ground-water sampling will be conducted in accordance with the approved Sampling and Analysis Plan for the Former Drum Holding Area.

Point "d" seems to be in conflict with the comment #7, wherein the requirement for an additive risk assessment is deemed to be necessary, rather than a direct comparison with MCLs or the generic ground-water single chemical clean up number for 1,1-Dichloroethane in ground water (Closure Plan Review Guidance for RCRA Facilities, Part II, OEPA). Please clarify.

Ohio EPA has combined its comments on response numbers 6, 7 and 8 into one comment in order to clarify what NSP must do to complete its risk based clean closure of the FDHA.

Ground Water Sampling:

If the initial sampling event confirms that only one well has contamination, then eight evenly spaced sampling events over at least 12 months, but less than 24 months, should be performed at the contaminated well with a final confirmational sampling of all the wells at the last sampling event of the 12 to 18 month sampling period. If more than one monitoring well displays contamination at the initial sampling event, then NSP must complete sufficient ground water sampling in order to acquire 12 data points from the contaminated wells with a final confirmational sampling of all the wells at the last sampling event of the 12 to 24 month period. If none of the wells display contamination at the initial sampling event then NSP should collect 12 ground water sample data points for the three downgradient wells.

Only monitoring wells located in the plume (downgradient of the unit) can be used in the risk assessment demonstration. Therefore, analytical data from the upgradient well shall not be used in the risk assessment demonstration. The risk assessment demonstration sampling must be completed within at least 12 months but less than 24 months of the first sampling event. The risk assessment demonstration must be completed within twelve months of the last sampling event.

Soil Sampling:

It was agreed during the August 29, 2002, meeting that NSP would submit a soil sampling and analysis plan to conduct soil sampling in support of a risk-based clean closure. The plan should be developed in accordance with Ohio EPA's *Closure Plan Review Guidance for RCRA Facilities*, Ohio EPA, 1999 (CPRG). Specifically, NSP should reference the CPRG, Part I, Section 3.1.4 and Part II, Section 3.1.6 for guidance on sampling and analysis, and fate and transport modeling. The results of this sampling event should be used to evaluate the soil to ground water leaching pathway.

Risk Assessment Demonstration:

If ground water sampling confirms only one contaminant (in this case probably 1,2-DCA), and there is no soil contamination overlying the ground water, and if the contaminant concentration is below the generic clean-up number (GCN) or MCL (whichever is lower) for the twelve data points, then NSP shall have completed OAC 3745-54 regulation ground water monitoring and risk based clean closure. The highest contaminant concentration shall be used as the exposure point concentration if only one monitoring well in the plume is contaminated. This shall be used in the calculation of risk as per Ohio EPA's CPRG, Part II.

If ground water sampling confirms more than one contaminant in the ground water (whether they each have an MCL or not), then additive risk will be required as outlined in the CPRG. If there is no soil contamination overlying the ground water, NSP may use the GCNs for all detected contaminants additively as outlined in the CPRG. If all the detected contaminants are below their additive GCNs for the twelve data points, then NSP shall have completed both OAC 3745-54 regulation ground water monitoring and risk based clean closure.

Risk assessment closures must meet the MCL or risk, whichever is lower. NSP must meet the MCL or risk (whichever is lower) in all well(s) for the twelve data points collected over a period of at least 12 months but not more than 24 months. The risk based clean closure standard must be met throughout the plume and not just at the compliance point or downgradient facility boundary.

It is understood that the NSP Fostoria facility is an operating manufacturing plant that has had a demonstrated history of environmental releases. The 1985 release of 600 gallons of off-specification TCE, the permitted air sources and permitted surface water discharges all witness the industrial nature of this facility. Regardless, the risk assessment (including additive risk) must consider all contaminants identified in the ground water and must be calculated on a total cancer risk level of 1×10^{-5} and a total hazard index (non-carcinogenic) level of 1. This would be for all affected and potentially affected environmental media (soil, ground water, surface water and air) and exposure pathways (ingestion, inhalation and dermal contact). The "clean" closure risk assessment scenario assumes an unlimited residential use and must consider consumption and use of ground water in adults as well as children. The ground water pathway is just one component of the entire risk assessment demonstration.

Results and Requirements:

If the risk assessment demonstration for either the single contaminant or multiple contaminant scenario indicates that the ground water passes risk, then NSP shall have completed OAC 3745-54 regulation ground water monitoring and risk based clean closure. Resampling is permitted under OAC rule 3745-54-99(G).

If the risk assessment demonstration for either the single contaminant or multiple contaminant scenario indicates that the ground water does not pass risk, then NSP shall reimplement corrective action by returning the recovery well to service. In addition, as requested in the director's February 26, 2001, letter, NSP shall submit an amended post-closure plan that meets the final ground water and cap maintenance requirements of Ohio Administrative Code (OAC) chapters 3745-54 and 3745-55.

9. NSP may submit a closure certification in accordance with OAC rule 3745-55-15 and ground water monitoring shall no longer be required. A statement must be included that the wells will be properly abandoned according to the Technical Guidance for Sealing Unused Wells (State Coordinating Committee on Ground Water. *Technical Guidance for Sealing Unused Wells*. <http://www.epa.sate.oh.us/ddagw/wellsealguid.pdf> 1996).

A statement will be added that states that the recovery well and the ground-water monitoring wells around the FDHA will be properly abandoned in accordance with the State of Ohio Technical Guidance for Sealing Unused Wells.

If NSP meets the risk assessment demonstration, Ohio EPA acknowledges and approves the response to comment 9.

Section 5, page 16, Statistical Analyses

10. This Section of the Closure Plan can be eliminated. Statistical analysis of the concentrations of non-naturally occurring volatile organic compounds (VOCs), by use of direct comparison, is a moot exercise. Once the additive risk assessment has been performed, (additive risk includes all site specific VOCs and their daughter products) and if it is displayed that the concentrations of the VOCs and their daughter products have met risk, then no further ground water monitoring shall be required. Resampling language should be moved to Subsection 4.2.2 as stated in comment #5.

Please see the response to comment 7, above.

Please see Ohio EPA comment on response 7, above.

Appendix B. Post Closure Sampling and Analysis Plan

11. Subsection 1.2 Decontamination and Storage of Clean Equipment (page 3) and Section 3.0 Step by Step Sampling Procedures (page 8): Comment six in Section 3.0 states that total depths of the monitoring wells will be measured and recorded to determine purging volumes and if siltation has occurred in the wells. Comment seven in Section 3.0 and the decontamination language in Subsection 1.2 should be revised to include washing with Alconox® detergent and successive rinses with distilled water.

The sampling and analysis plan will be revised to indicate that the water level meter will be washed with detergent and rinsed with distilled water between uses in the monitoring wells.

Ohio EPA acknowledges and approves the response to comment 11.

12. Subsection 1.3 Purging and Sampling, Page 3: Revise the last sentence of the second paragraph of subsection 1.3 which states in part, "... the use of proper sampling techniques, and eliminating, when possible, all bubbles and headspace within the VOA vials." No bubbles or headspace should be present in the VOC sample vials. Air bubbles and a headspace will jeopardize the analysis of the VOC samples.

It is realized that headspace and bubbles should not be in VOA sampling containers, which is why the statement was made that "... the use of proper sampling techniques, and eliminating (emphasis added), when possible, all bubbles and headspace within the VOA vials" was made. There are rare occasions, however, when small bubbles are present in the VOA vials, due to reasons other than sampling technique. Bennett & Williams recommends the use of the accepted sampling protocol of trying three times per vial to eliminate all bubbles from the sample. If, after three tries, a bubble is still present, the presence of the bubble is noted in the field book entry for that sample and the sample bottle is sealed. It is believed that keeping the vial open for long periods of time reduces the representative nature of the sample more so than the presence of a small bubble, and adding water to the sample vial (to form the meniscus) many times to try to eliminate the bubble dilutes the preservative in the bottle, which potentially violates the analytical method protocol.

Ohio EPA acknowledges and approves the response to comment 12.

13. Section 3.0 Step by Step Sampling Procedures, Number 16, Page 10: This section should be revised to include the provision that no bubbles or headspace should be present in the VOC sample vials. Air bubbles and a headspace will jeopardize the analysis of the VOC samples.

Please see the response to comment 12, above.

Ohio EPA acknowledges and approves the response to comment 13.

General Comment:

14. In accordance with OAC 3745-57-10(B), the amended post closure plan should include a description of how NSP will maintain the integrity and effectiveness of the final cover, including making repairs to the cap as necessary to correct the effects of settling, subsidence, erosion or other events; and prevent run-on and run-off from eroding or otherwise damaging the final cover.

A section will be added to the amended closure plan that states that NSP personnel will periodically inspect the cap at the FDHA to assess whether the cap integrity is being maintained, and that repairs to the cap to correct the effects of settling, subsidence, erosion or other events will be taken as necessary.

The language above does not need to be added to the plan at this time. However, in the event that NSP's risk-based closure demonstration is not successful, NSP shall submit an amended post-closure plan that meets the cap maintenance and post-closure care requirements of OAC chapter 3745-55, in accordance with the director's February 26, 2001, request.



State of Ohio Environmental Protection Agency

P.O. Box 1049, 1800 WaterMark Dr.
Columbus, Ohio 43266-0149
(614) 644-3020
FAX (614) 644-2329

RECORDED JUN 14 1993
RECORD CLERK *Pass A*

George V. Voinovich
Governor

Donald R. Schregardus
Director

February 10, 1993

Re: UCAR Carbon Company, Inc.
US EPA ID No.: OHD004167383
Ohio ID No.: 02-18-0132

UCAR Carbon Company, Inc.
Attn: Mr. Edwin Frye
PO Box 94637
Cleveland, Ohio 44101

Dear Mr. Frye:

According to our records, on November 16, 1989, the Director of Ohio EPA approved a closure plan submitted by UCAR Carbon Company, Inc. for their hazardous waste container storage pads A, B & C located at 11709 Madison Avenue, Lakewood, Ohio 44107. On July 23, 1992, UCAR submitted to the Director certification documents stating that hazardous waste container storage pads A, B & C had been closed according to the specifications in the approved closure plan. Ohio EPA District Office personnel completed a certification of closure inspection and a review of documents pertaining to hazardous waste container storage pads A, B & C on October 14, 1992. Based on this inspection and review, the Ohio EPA has determined that hazardous waste storage pads A, B & C have been closed in accordance with the approved closure plan and Rules 3745-66-12 through 3745-66-15 of the Ohio Administrative Code (OAC) and UCAR Carbon Company, Inc. will maintain the status of a Large Quantity Generator of hazardous waste for this facility.

You should continue to use the identification number assigned to you for purposes of compliance with Ohio EPA manifest, recordkeeping and reporting requirements for generators of hazardous waste as appropriate.

If you have any questions concerning your current status, please contact the Ohio EPA, Northeast District Office, Attn: Marlene Emanuelson, 2110 East Aurora Road, Twinsburg, Ohio 44087, telephone (216) 425-9171.

As specified in OAC Rule 3745-66-40, UCAR Carbon Company, Inc. will not be required to maintain financial assurance for closure costs and liability coverage for accidental occurrences for this facility in accordance with Rules 3745-66-43(H) and 3745-66-47(E) of the OAC.

UCAR Carbon Company, Inc.
Completion of Closure
Pg. 2

If you intend to no longer pursue your Ohio Hazardous Waste Facility Installation and Operation permit and wish to withdraw your permit, the following information should be forwarded to Ohio EPA, Division of Hazardous Waste Management, Attn: Data Management Section at the letterhead address within thirty (30) days:

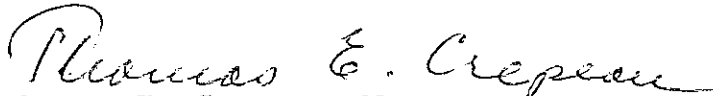
1. A formal request for withdrawal signed by an authorized representative according to Rule 3745-50-42 (A-D) of the OAC (Enclosure 1) including a full explanation of your reasons for withdrawal of your application; and
2. A certification statement signed by the same authorized representative of your facility (Enclosure 2).

Upon receipt of the above items, Ohio EPA will review your submission along with any facility inspection report(s). If no additional information is necessary, your permit withdrawal request will be finalized.

Please note that this letter does not relieve you of any corrective action responsibilities that may be required.

Should you have further questions concerning this procedure, please call Randy Sheldon, Data Management Section at (614) 644-2977.

Very truly yours,



Thomas E. Crepeau, Manager
Data Management Section
Division of Hazardous Waste Management

TEC/RS/ds

cc: Kevin Pierard, US EPA, Region V ✓
Harriet Croke, US EPA, Region V
Hazardous Waste Facility Board
Randy Meyer, RCRA TAS, DHWM
Laurie Stevenson, HW ES, DHWM
Beth Barrett, DMS, DHWM
Mike Rath, DMS, DHWM
Marlene Emanuelson, NEDO, DHWM
File



State of Ohio Environmental Protection Agency

P.O. Box 1049, 1800 WaterMark Dr.
Columbus, Ohio 43266-0149
(614) 644-3020
FAX (614) 644-2329

RECEIVED

JUN 18 1992

OFFICE OF RCRA
Waste Management Division
U.S. EPA, REGION V

George V. Voinovich
Governor

Donald R. Schregardus
Director

CERTIFIED MAIL

June 12, 1992

RE: CLOSURE PLAN EXTENSION
UCAR Carbon Company, Inc.
OHD 004 167 383/02-18-0132

Edwin Frye
Environmental Coordinator
UCAR Carbon Company, Inc.
P.O. Box 94637
Cleveland, Ohio 44101

Dear Mr. Frye:

On May 19, 1992, UCAR Carbon Company, Inc., submitted a request for an extension to the closure period specified in the approved closure plan dated November 16, 1989, for 180 days, until November 10, 1992. The extension request was submitted pursuant to OAC Rule 3745-66-13(B) as closure will require longer than the 180 day period specified in OAC Rule 3745-66-13. UCAR Carbon Company, Inc. has requested this extension due to the need to complete additional soil boring analyses.

My staff reviewed your request and recommends that the extension be granted per rule 3745-66-13(B) of the Ohio Administrative Code. I concur and am therefore granting your extension request. This extension is being granted for the above referenced closure plan and expires on November 10, 1992.

UCAR Carbon Company, Inc. shall continue to take all steps to prevent a threat to human health and the environment from the unclosed but inactive waste management unit per OAC Rule 3745-66-13(B)(2).

Please be advised that approval of this closure extension request does not release UCAR Carbon Company, Inc. from any responsibilities as required under the Hazardous and Solid Waste Amendments of 1984 regarding corrective action for all releases of hazardous waste or constituents from any solid waste management unit, regardless of the time at which waste was placed in the unit.

I certify this to be a true and accurate copy of the official document as filed in the records of the Ohio Environmental Protection Agency.

By: Mary Carver Date 6-12-92



Printed on recycled paper

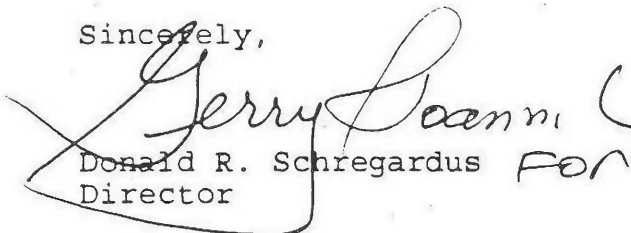
Mr. Frye
UCAR Carbon Company, Inc.
Page Two

When closure is completed, the Ohio Administrative Code Rule 3745-66-15 requires the owner or operator of a facility to submit to the Director of the Ohio EPA certification by the owner or operator and an independent professional engineer that the facility has been closed in accordance with the specifications in the approved closure plan. These certifications shall follow the format specified in OAC 3745-50-42(D). These certifications should be submitted to: Ohio Environmental Protection Agency, Division of Hazardous Waste Management, Attn: Tom Crepeau, Data Management Section, P.O. Box 1049, Columbus, Ohio 43226-1049.

You are hereby notified that this action of the Director is final and may be appealed to the Environmental Board of Review pursuant to section 3745.04 of the Ohio Revised Code. The appeal must be in writing and set forth the action complained of and the grounds upon which the appeal is based. It must be filed with the Environmental Board of Review within thirty (30) days from the receipt of this letter. A copy of the appeal must be served to the Director of the Ohio Environmental Protection Agency within three (3) days of filing with the Board. An appeal must be filed at the following address:

Environmental Board of Review
236 East Town Street
Room 300
Columbus, Ohio 43215

Sincerely,


Donald R. Schregardus
Director

FOR

I certify this to be a true and accurate copy of the official document as filed in the records of the Ohio Environmental Protection Agency.

By: Mary Gavin Date 6-12-92

DRS/MS/pas

cc: Tom Crepeau, DHWM Central File, Ohio EPA
Section Chief, Ohio Permit Section
USEPA - Region V
Marlene Emanuelson, NEDO, Ohio EPA
Montee Suleiman, DHWM, Ohio EPA

OHIO EPA

JUN 12 1992

RECEIVED DIRECTOR'S OFFICE



State of Ohio Environmental Protection Agency

P.O. Box 1049, 1800 WaterMark Dr.
Columbus, Ohio 43266-0149
(614) 644-3020
FAX (614) 644-2329

RECEIVED

JAN 21 1992

George V. Voinovich
Governor

OFFICE OF RCRA
Waste Management Division
U.S. EPA REGION V
Donald R. Schregardus
Director

File in
Part A
Five

January 10, 1992

Re: UCAR Carbon Company, Inc.
EPA ID No.: OHD004167383
Ohio ID No.: 02-18-0132
Partial Closure

UCAR Carbon Company, Inc.
Attn: Mr. N.R. Hillson
PO Box 6087
Cleveland, Ohio 44101

Dear Mr. Hillson:

According to our records, on August 14, 1989, the Director of Ohio EPA approved a closure plan submitted by UCAR Carbon Company, Inc. for the hazardous waste storage tank D located at 11709 Madison Avenue, Cleveland, Ohio 44107. On August 26, 1991, UCAR Carbon Company, Inc. submitted to the Director certification documents that the hazardous waste storage tank D had been closed according to the specifications in the approved closure plan. Ohio EPA District Office personnel completed a certification of closure inspection on May 24, 1991 and a review of documents on August 26, 1991 and January 3, 1992 pertaining to the hazardous waste storage tank D. Based on this inspection and subsequent reviews, the Ohio EPA has determined that the hazardous waste storage tank D has been closed in accordance with the approved closure plan and Rules 3745-66-12 through 3745-66-15 of the Ohio Administrative Code (OAC) and UCAR Carbon Company, Inc. will maintain the status of a TSD pending final closure of other hazardous waste units.

You should continue to use the identification number assigned to you for purposes of compliance with the Ohio EPA manifest, recordkeeping and reporting requirements for generators of hazardous waste as appropriate.

If you have any questions concerning your current status, please contact the Ohio EPA, Northeast District Office, Attn: Marlene Emanuelson, 2110 E. Aurora Rd., Twinsburg, Ohio 44087, tel.: (216) 425-9171.

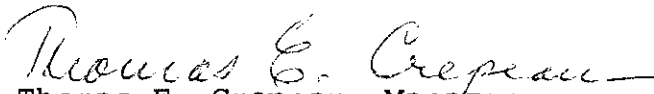
In accordance with Rules 3745-66-43(H) and 3745-66-47(E) of the OAC, UCAR Carbon Company, Inc. will be required to maintain financial assurance for closure costs and liability coverage for accidental occurrences at this facility for the remaining hazardous waste units.

January 10, 1992
UCAR Carbon Company, Inc.
Completion of Closure
Pg. 2

Please note that this letter does not relieve you of any corrective action responsibilities that may be required.

Should you have further questions concerning this procedure, please call Randy Sheldon, Data Management Section at (614) 644-2977.

Very truly yours,



Thomas E. Crepeau, Manager
Data Management Section
Division of Hazardous Waste Management

TC/rs

cc: Kevin Pierard, US EPA, Region V
Lisa Pierard, US EPA, Region V ✓
Hazardous Waste Facility Board
Randy Meyer, RCRA TAS, DHWM
Laurie Stevenson, HW ES, DHWM
Beth Harris, DMS, DHWM
Rhonda Rothschild, DMS, DHWM
Marlene Emanuelson, DHWM, NEDO
File



State of Ohio Environmental Protection Agency

P.O. Box 1049, 1800 WaterMark Dr.
Columbus, Ohio 43266-0149
(614) 644-3020
FAX (614) 644-2329

George V. Voinovich
Governor

*File in
Part A
File*

CERTIFIED MAIL

January 9, 1992

RE: CLOSURE PLAN EXTENSION
UCAR Carbon Company, Inc.
Storage Area
OHD 004 167 383

Mr. Edwin E. Frye
UCAR Carbon Company, Inc.
P.O. Box 94637
Cleveland, Ohio 44101

Dear Mr. Frye:

On November 12, 1991, UCAR Carbon Company, Inc., submitted a request for an extension to the closure period specified in the approved closure plan dated November 16, 1989, for 180 days, until May 14, 1992. The extension request was submitted pursuant to OAC Rule 3745-66-13(B) as closure will require longer than the 180 day period specified in OAC Rule 3745-66-13. UCAR Carbon Company, Inc. has requested this extension to determine the full extent of contamination.

My staff reviewed your request and recommends that the extension be granted per rule 3745-66-13(B) of the Ohio Administrative Code. I concur and am therefore granting your extension request. This extension is being granted for the above referenced closure plan and expires on May 14, 1992.

UCAR Carbon Company, Inc. shall continue to take all steps to prevent a threat to human health and the environment from the unclosed but inactive waste management unit per OAC Rule 3745-66-13(B) (2).

Please be advised that approval of this closure extension request does not release UCAR Carbon Company, Inc. from any responsibilities as required under the Hazardous and Solid Waste Amendments of 1984 regarding corrective action for all releases of hazardous waste or constituents from any solid waste management unit, regardless of the time at which waste was placed in the unit.

I certify this to be a true and accurate copy of the
original document as it is in the records of the Ohio
Environmental Protection Agency.

By: C. J. Kachey Date 1/9/92

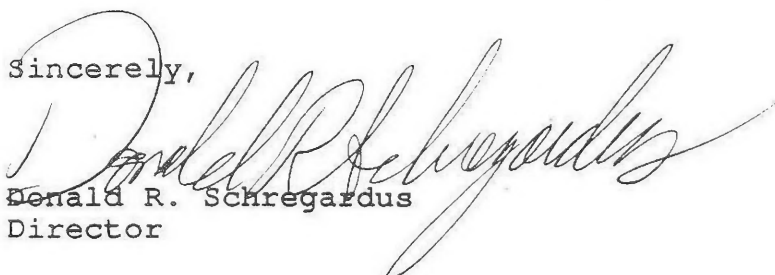
Mr. Frye
UCAR Carbon Company, Inc.
Page Two

When closure is completed, the Ohio Administrative Code Rule 3745-66-15 requires the owner or operator of a facility to submit to the Director of the Ohio EPA certification by the owner or operator and an independent professional engineer that the facility has been closed in accordance with the specifications in the approved closure plan. These Certifications shall follow the format specified in OAC 3745-50-42(D). These certifications should be submitted to: Ohio Environmental Protection Agency, Division of Hazardous Waste Management, Attn: Tom Crepeau, Data Management Section, P.O. Box 1049, Columbus, Ohio 43226-1049.

You are hereby notified that this action of the Director is final and may be appealed to the Environmental Board of Review pursuant to section 3745.04 of the Ohio Revised Code. The appeal must be in writing and set forth the action complained of and the grounds upon which the appeal is based. It must be filed with the Environmental Board of Review within thirty (30) days from the receipt of this letter. A copy of the appeal must be served to the Director of the Ohio Environmental Protection Agency within three (3) days of filing with the Board. An appeal must be filed at the following address:

Environmental Board of Review
236 East Town Street
Room 300
Columbus, Ohio 43215

Sincerely,


Donald R. Schregardus
Director

DRS/PV/pas

cc: Tom Crepeau, DHWM Central File, Ohio EPA
Lisa Pierard, USEPA - Region V
Joel Morbito, USEPA - Region V
Harry Courtright, NEDO, Ohio EPA
Paul Vandermeer, DHWM, Ohio EPA

I certify this to be a true and accurate copy of the original document as filed in the records of the Ohio Environmental Protection Agency.

By: Enthe Mackey Date: 1/9/92

OHIO EPA

JAN-9 1992

RECEIVED DIRECTOR'S OFFICE



State of Ohio Environmental Protection Agency

P.O. Box 1049, 1800 WaterMark Dr.
Columbus, Ohio 43266-0149
(614) 644-3020
Fax (614) 644-2329

File in
part A

George V. Voinovich
Governor

CLOSURE PLAN EXTENSION APPROVAL

CERTIFIED MAIL

Re: Closure Plan Extension
UCAR Carbon Company, Inc.
OHD004167383/02-18-0231

Mr. Edwin E. Frye
UCAR Carbon Company, Inc.
P.O. Box 94637
Cleveland, Ohio 44101

Dear Mr. Frye:

On May 6, 1991, UCAR Carbon Company, Inc. submitted a request for an extension to the closure period for a storage area specified in the approved closure plan for 180 days until November 12, 1991. The extension request was submitted pursuant to Rule 3745-66-13(B) of the Ohio Administrative Code (OAC) as closure will require longer than the 180 day period specified in OAC Rule 3745-66-13. UCAR Carbon Company, Inc. has requested this extension of time due to difficulties in defining the extent of contamination.

UCAR Carbon Company, Inc. will continue to take all steps to prevent a threat to human health and the environment from the unclosed but inactive waste management unit per OAC Rule 3745-66-13(B)(2).

An extension of time allowed for closure is hereby granted until November 12, 1991.

Please be advised that approval of this closure extension request does not release UCAR Carbon Company, Inc. from any responsibilities as required under the Hazardous and Solid Waste Amendments of 1984 regarding corrective action for all releases of hazardous waste or constituents from any solid waste management unit, regardless of the time at which waste was placed in the unit.



Mr. Edwin E. Frye
Page Two

When closure is completed, the Ohio Administrative Code Rule 3745-66-15 requires the owner or operator of a facility to submit to the Director of the Ohio EPA certification by the owner or operator and a qualified, independent, registered professional engineer that the facility has been closed in accordance with the approved closure plan. The certification by the owner or operator shall include the statement found in OAC 3745-50-42 (D). These certifications should be submitted to: Ohio Environmental Protection Agency, Division of Solid and Hazardous Waste Management, Attn: Thomas Crepeau, Data Management Section, P.O. Box 1049, Columbus, Ohio 43266-0149.

Sincerely,



Donald R. Schregardus
Director

DRS/PLV/pas

cc: Paul L. Vandermeer, Ohio EPA, DSHWM
Lisa Pierard, USEPA, Region V
Joel Morbito, USEPA, Region V
Tom Crepeau, Ohio EPA, DSHWM Central File
Greg Taylor, Ohio EPA, NEDO



State of Ohio Environmental Protection Agency

P.O. Box 1049, 1800 WaterMark Dr.
Columbus, Ohio 43266-0149

RECEIVED
NOV 10 1990

Richard F. Celeste
Governor

OFFICE OF RCRA
Waste Management Division
U.S. EPA, REGION V

CERTIFIED MAIL

November 16, 1990

RE: CLOSURE PLAN EXTENSION
UCAR Carbon Company, Inc.
OHD 004 167 383/02-18-0132

Mr. Edwin E. Frye
UCAR Carbon Company, Inc.
P.O. Box 94637
Cleveland, Ohio 44101

Mr. Frye:

On October 26, 1990, UCAR Carbon Company, Inc., submitted a request for an extension to the closure period specified in the approved closure plan for 180 days. The extension request was submitted pursuant to OAC Rule 3745-66-13(B) as closure will require longer than the 180 days period specified in OAC Rule 3745-66-13. UCAR Carbon Company, Inc. has requested this extension to complete Remediation of Pad 'C'.

Therefore, closure of Pad 'C' will require greater than 180 days because of weather delays and increased scope of remedial action. UCAR Carbon Company, Inc. will continue to take all steps to prevent a threat to human health and the environment from the unclosed but inactive waste management unit per OAC Rule 3745-66-13(B) (2).

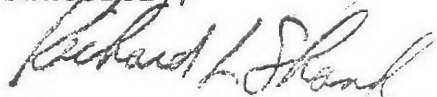
An extension of time allowed for closure is hereby granted.

Please be advised that approval of this closure extension request does not release UCAR Carbon Company, Inc. from any responsibilities as required under the Hazardous and Solid Waste Amendments of 1984 regarding corrective action for all releases of hazardous waste or constituents from any solid waste management unit, regardless of the time at which waste was placed in the unit.

Mr. Frye
Page Two

When closure is completed, the Ohio Administrative Code Rule 3745-66-15 requires the owner or operator of a facility to submit to the Director of the Ohio EPA certification by the owner or operator and a registered professional engineer that the facility has been closed in accordance with the approved closure plan. The owner or operator certification shall follow the format specified in OAC 3745-50-42(D). These certifications should be submitted to: Ohio Environmental Protection Agency, Division of Solid and Hazardous Waste Management, Attn: Tom Crepeau, Data Management Section, P.O. Box 1049, Columbus, Ohio 43226-1049.

Sincerely,



Richard L. Shank, Ph.D.
Director

RLS/RM/pas

cc" Tom Crepeau, DSHWM Central File, Ohio EPA
Lisa Pierard, USEPA - Region V
Joel Morbito, USEPA - Region V
Greg Taylor, NEDO, Ohio EPA
Paul Vandermeer, DSHWM, Ohio EPA



State of Ohio Environmental Protection Agency

P.O. Box 1049, 1800 WaterMark Dr.
Columbus, Ohio 43266-0149
(614) 644-3020 Fax (614) 644-2329

Richard F. Celeste
Governor

Francine

CLOSURE PLAN EXTENSION APPROVAL

CERTIFIED MAIL

September 19, 1990

Re: Closure Plan Extension
UCAR Carbon Company, Inc., Lakewood
OHD 004 167 383/02-18-0132

Edwin E. Frye, Environmental Coordinator
UCAR Carbon Company, Inc., Lakewood
P.O. Box 6087
Cleveland, Ohio 44101

Dear Mr. Frye:

On August 27, 1990, UCAR Carbon Company, Inc., submitted a request for an extension to the closure period specified in the approved closure plan for 180 days. The extension request was submitted pursuant to OAC Rule 3745-66-13(B) as closure will require longer than the 180 days period specified in OAC Rule 3745-66-13. UCAR Carbon Company, Inc., has requested this extension to define the full extent of contamination near Pad C.

Therefore, closure of the hazardous waste container storage pads A, B, and C will require greater than 180 days because of the need to define the full extent of contamination near Pad C. UCAR Carbon Company, Inc., will continue to take all steps to prevent a threat to human health and the environment from the closed but inactive waste management unit per OAC Rule 3745-66-13(B)(2).

An extension of time allowed for closure is hereby granted. All closure activities shall be completed by November 16, 1990.

Mr. Frye
Page Two

Please be advised that approval of this closure extension request does not release UCAR Carbon Company, Inc., from any responsibilities as required under the Hazardous and Solid Waste Amendments of 1984 regarding corrective action for all releases of hazardous waste or constituents from any solid waste management unit, regardless of the time at which waste was placed in the unit.

When closure is completed, the Ohio Administrative Code Rule 3745-66-15 requires the owner or operator of a facility to submit to the Director of the Ohio EPA certification by the owner or operator and a registered professional engineer that the facility has been closed in accordance with the approved closure plan. The owner or operator certification shall follow the format specified in OAC 3745-50-42(D). These certifications should be submitted to: Ohio Environmental Protection Agency, Division of Solid and Hazardous Waste Management, Attn: Tom Crepeau, Program Planning and Management Section, P.O. Box 1049, Columbus, Ohio 43266-1049.

Sincerely,



Richard L. Shank, Ph.D.
Director

RLS/RM/pas

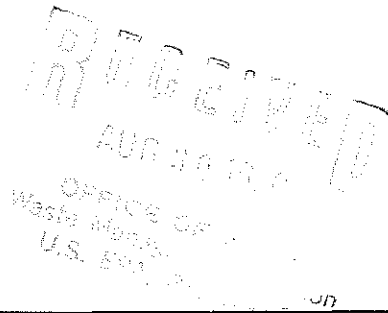
cc: Tom Crepeau, DSHWM Central File, Ohio EPA
Lisa Pierard, USEPA, Region V
Greg Taylor, NEDO, Ohio EPA
Randy Meyer, DSHWM, Ohio EPA
Joel Morbito, USEPA, Region V

1793U



State of Ohio Environmental Protection Agency

P.O. Box 1049, 1800 WaterMark Dr.
Columbus, Ohio 43266-0149
(614) 644-3020 Fax (614) 644-2329



Richard F. Celeste
Governor

CLOSURE PLAN EXTENSION APPROVAL

CERTIFIED MAIL

August 23, 1990

Re: Closure Plan Extension
UCAR Carbon Company, Inc.
OHD 004 167 383/02-18-0132

A.J. Passalacqua
UCAR Carbon Company, Inc.
P.O. Box 6087
Cleveland, Ohio 44101

Dear Mr. Passalacqua:

On May 9, 1990, UCAR Carbon Company, Inc. submitted a request for an extension to the closure period specified in the approved closure plan until August 14, 1990. The extension request was submitted pursuant to OAC Rule 3745-66-13(B) as closure will require longer than the 180 days period specified in OAC Rule 3745-66-13. UCAR Carbon Company, Inc. has requested this extension due to the need to complete decontamination activities.

Therefore, closure of the three hazardous waste container storage areas and storage tank will require greater than 180 days because of the need to complete decontamination activities. UCAR Carbon Company, Inc. will continue to take all steps to prevent a threat to human health and the environment from the closed but inactive waste management unit per OAC Rule 3745-66-13(B)(2).

An extension of time allowed for closure is hereby granted. All closure activities shall be completed by August 14, 1990.

Please be advised that approval of this closure extension request does not release UCAR Carbon Company, Inc. from any responsibilities as required under the Hazardous and Solid Waste Amendments of 1984 regarding corrective action for all releases of hazardous waste or constituents from any solid waste management unit, regardless of the time at which waste was placed in the unit.

Mr. Passalacqua
Page Two

When closure is completed, the Ohio Administrative Code Rule 3745-66-15 requires the owner or operator of a facility to submit to the Director of the Ohio EPA certification by the owner or operator and a registered professional engineer that the facility has been closed in accordance with the approved closure plan. The owner or operator certification shall follow the format specified in DAC 3745-50-42(D). These certifications should be submitted to: Ohio Environmental Protection Agency, Division of Solid and Hazardous Waste Management, Attn: Tom Crepeau, Data Management Section, P.O. Box 1049, Columbus, Ohio 43266-1049.

Sincerely,

A handwritten signature in cursive script, appearing to read "Richard L. Shank".

Richard L. Shank, Ph.D.
Director

RLS/RM/pas

cc: Tom Crepeau, DSHWM Central File, Ohio EPA
Lisa Pierard, USEPA, Region V
Greg Taylor, NEDO, Ohio EPA
Randy Meyer, CO, DSHWM, Ohio EPA
Joel Morbito, USEPA, Region V

1793U



State of Ohio Environmental Protection Agency

P.O. Box 1049, 1800 WaterMark Dr.
Columbus, Ohio 43266-0149
(614) 644-3020 Fax (614) 644-2329

Richard F. Celeste
Governor

CLOSURE PLAN EXTENSION APPROVAL

CERTIFIED MAIL

July 18, 1990

Re: Closure Plan Extension
UCAR Carbon Company, Inc.
OHD 003 926 748/02-18-0104

David A. Mieskowski, Manager
Health, Safety, and Environmental Protection
UCAR Carbon Company, Inc.
P.O. Box 6116
Cleveland, Ohio 44101

Dear Mr. Mieskowski:

On May 29, 1990, UCAR Carbon Company, Inc. submitted a request for an extension to the closure period specified in the approved closure plan for 60 days. The extension request was submitted pursuant to OAC Rule 3745-66-13(B) as closure will require longer than the 180 days period specified in OAC Rule 3745-66-13. UCAR Carbon Company, Inc. has requested this extension due to incomplete arrangements for proper transportation and disposal of two containers of shock sensitive materials.

Therefore, closure of the container storage areas will require greater than 180 days because of incomplete arrangements for proper transportation and disposal of two containers of shock sensitive materials. UCAR Carbon Company, Inc. will continue to take all steps to prevent a threat to human health and the environment from the closed but inactive waste management unit per OAC Rule 3745-66-13(B)(2).

An extension of time allowed for closure is hereby granted. All closure activities shall be completed by August 28, 1990.

OHIO E.P.A.

JUL 18 90

I certify this to be a true and accurate copy of the official document as filed in the records of the Ohio Environmental Protection Agency.

ENTERED DIRECTOR'S JOURNAL

By: Carolyn Nicodemus Date 6/18/90

Mr. Mieskowski
Page Two
July 18, 1990

Please be advised that approval of this closure extension request does not release UCAR Carbon Company, Inc. from any responsibilities as required under the Hazardous and Solid Waste Amendments of 1984 regarding corrective action for all releases of hazardous waste or constituents from any solid waste management unit, regardless of the time at which waste was placed in the unit.

When closure is completed, the Ohio Administrative Code Rule 3745-66-15 requires the owner or operator of a facility to submit to the Director of the Ohio EPA certification by the owner or operator and a registered professional engineer that the facility has been closed in accordance with the approved closure plan. The owner or operator certification shall follow the format specified in OAC 3745-50-42(D). These certifications should be submitted to: Ohio Environmental Protection Agency, Division of Solid and Hazardous Waste Management, Attn: Tom Crepeau, Program Planning and Management Section, P.O. Box 1049, Columbus, Ohio 43266-1049.

You are notified that this action of the Director is final and may be appealed to the Environmental Board of Review pursuant to Section 3745.04 of the Ohio Revised Code. The appeal must be in writing and set forth the action complained of and the grounds upon which the appeal is based. It must be filed with the Environmental Board of Review within thirty (30) days after notice of the Director's action. A copy of the appeal must be served on the Director of the Ohio Environmental Protection Agency within three (3) days of filing with the Board. An appeal may be filed with the Environmental Board of Review at the following address: Environmental Board of Review, 250 East Town Street, Room 101, Columbus, Ohio 43266-0557.

Sincerely,



Richard L. Shank, Ph.D.
Director

RLS/RM/pas

cc: Tom Crepeau, DSHWM Central File, Ohio EPA
Lisa Pierard, USEPA, Region V
Greg Taylor, NEDO, Ohio EPA
Randy Meyer, DSHWM, Ohio EPA
Joel Morbito, USEPA, Region V

OHIO E.P.A.

JUL 18 90

1793U

I certify this to be a true and accurate copy of the official document as filed in the records of the Ohio Environmental Protection Agency.

By: Carolyn Nicodemus Date 6/18/90

ENTERED DIRECTOR'S JOURNAL



State of Ohio Environmental Protection Agency

P.O. Box 1049, 1800 WaterMark Dr.
Columbus, Ohio 43266-0149

RECEIVED
MAR 26 1990
OFFICE OF RCRA
WASTE MANAGEMENT DIVISION
EPA, REGION V

Francine
PART A

Richard F. Celeste
Governor

CLOSURE PLAN EXTENSION APPROVAL

CERTIFIED MAIL

March 26, 1990

Re: Closure Plan Extension
UCAR Carbon Company, Inc.
Tank D
OHD 004 167 383/02-18-0132

A.J. Passalacqua
UCAR Carbon Company, Inc.
P.O. Box 6087
Cleveland, Ohio 44101

Dear Mr. Passalacqua:

On December 19, 1989, UCAR Carbon Company, Inc. submitted a request for an extension to the closure period specified in the approved closure plan until May 16, 1990. The extension request was submitted pursuant to OAC Rule 3745-66-13(B) as closure will require longer than the 180 days period specified in OAC Rule 3745-66-13. UCAR Carbon Company, Inc. has requested this extension due to adverse weather conditions.

Therefore, closure of the hazardous waste Storage Tank D will require greater than 180 days because of adverse weather conditions. UCAR Carbon Company, Inc. will continue to take all steps to prevent a threat to human health and the environment from the closed but inactive waste management unit per OAC Rule 3745-66-13(B)(2).

The public was given the opportunity to submit written comments regarding the request for an extension to the closure period for UCAR Carbon Company, Inc. in accordance with OAC Rule 3745-66-13. The public notice appeared in the week of January 8, 1990, in the Plain Dealer. No comments were received in this matter.

An extension of time allowed for closure is hereby granted. All closure activities shall be completed by May 16, 1990.

I certify this to be a true and accurate copy of the official document as filed in the records of the Ohio Environmental Protection Agency.

By: Mary Gorm Date 3-26-90

Ohio Environmental Protection Agency
ENTERED DIRECTOR'S JOURNAL

MAR 26 1990

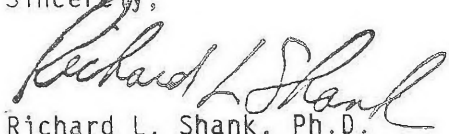
Mr. Passalacqua
Page Two

Please be advised that approval of this closure extension request does not release UCAR Carbon Company, Inc. from any responsibilities as required under the Hazardous and Solid Waste Amendments of 1984 regarding corrective action for all releases of hazardous waste or constituents from any solid waste management unit, regardless of the time at which waste was placed in the unit.

When closure is completed, the Ohio Administrative Code Rule 3745-66-15 requires the owner or operator of a facility to submit to the Director of the Ohio EPA certification by the owner or operator and a registered professional engineer that the facility has been closed in accordance with the approved closure plan. The owner or operator certification shall follow the format specified in OAC 3745-50-42(D). These certifications should be submitted to: Ohio Environmental Protection Agency, Division of Solid and Hazardous Waste Management, Attn: Tom Crepeau, Program Planning and Management Section, P.O. Box 1049, Columbus, Ohio 43266-1049.

You are notified that this action of the Director is final and may be appealed to the Environmental Board of Review pursuant to Section 3745.04 of the Ohio Revised Code. The appeal must be in writing and set forth the action complained of and the grounds upon which the appeal is based. It must be filed with the Environmental Board of Review within thirty (30) days after notice of the Director's action. A copy of the appeal must be served on the Director of the Ohio Environmental Protection Agency and the Environmental Enforcement Section of the Office of the Attorney General within three (3) days of filing with the Board. An appeal may be filed with the Environmental Board of Review at the following address: Environmental Board of Review, 250 East Town Street, Room 101, Columbus, Ohio 43266-0557.

Sincerely,



Richard L. Shank, Ph.D.
Director

I certify this to be a true and accurate copy of the official document as filed in the records of the Ohio Environmental Protection Agency.

By: Mary Cavin Date 3-26-90

RLS/RM/pas

cc: Tom Crepeau, DSHWM Central File, Ohio EPA
Lisa Pierard, USEPA, Region V
Greg Taylor, NEDO, Ohio EPA
Randy Meyer, DSHWM, Ohio EPA
Joel Morbito, USEPA, Region V

1793U

Ohio Environmental Protection Agency
ENTERED DIRECTOR'S JOURNAL

MAR 26 1990



State of Ohio Environmental Protection Agency

P.O. Box 1049, 1800 WaterMark Dr.
Columbus, Ohio 43266-0149

Richard F. Celeste
Governor

Francine

CLOSURE PLAN APPROVAL

CERTIFIED MAIL

November 16, 1989

Re: Closure Plan
UCAR Carbon Company, Inc.
OHD 004 167 383/02-18-0132

Nyle Hillson
Environmental Coordinator
UCAR Carbon Company, Inc.
P.O. Box 6087
Cleveland, Ohio 44101

Ohio Environmental Protection Agency
ENTERED DIRECTOR'S JOURNAL

NOV 16 1989

I certify this to be a true and accurate copy of the
official document as filed in the records of the Ohio
Environmental Protection Agency.

Dear Mr. Hillson:

By: Mary Cavin Date 11-16-89

On March 15, 1989, UCAR Carbon Company, Inc. submitted to Ohio EPA a closure plan for hazardous waste container storage areas A, B, and C located at 11709 Madison Avenue, Lakewood, Ohio. Revisions to the closure plan were received on October 12, 1989, in response to my September 11, 1989, closure plan disapproval letter. The closure plan was submitted pursuant to Rule 3745-66-12 of the Ohio Administrative Code (OAC) in order to demonstrate that UCAR Carbon Company, Inc.'s proposal for closure complies with the requirements of OAC Rules 3745-66-11 and 3745-66-12.

The public was given the opportunity to submit written comments regarding the closure plan of UCAR Carbon Company, Inc. in accordance with OAC Rule 3745-66-12. No comments were received by Ohio EPA in this matter.

Based upon review of the company's submittal and subsequent revisions, I conclude that, with modifications, the closure plan for the hazardous waste facility at UCAR Carbon Company, Inc. meets the performance standard contained in OAC Rule 3745-66-11 and complies with the pertinent parts of OAC Rule 3745-66-12.

The closure plan submitted to Ohio EPA by UCAR Carbon Company, Inc. is hereby approved with the following modifications:

1. UCAR Carbon Co., Inc. shall notify Greg Taylor, Ohio EPA, NEDO, at least five (5) business days in advance of any critical activities, so that he may be present to observe these activities.

Please be advised that approval of this closure plan does not release UCAR Carbon Company, Inc. from any responsibilities as required under the Hazardous and Solid Waste Amendments of 1984 regarding corrective action for all releases of hazardous waste or constituents from any solid waste management unit, regardless of the time at which waste was placed in the unit.

Notwithstanding compliance with the terms of the closure plan, the Director may, on the basis of any information that there is or has been a release of hazardous waste, hazardous constituents, or hazardous substances into the

environment, issue order pursuant to Section 3734.20 et seq of the Revised Code or Chapters 3734 or 6111 of the Revised Code requiring corrective action or such other response as deemed necessary; or initiate appropriate action; or seek any appropriate legal or equitable remedies to abate pollution or contamination or to protect public health or safety or the environment.

Nothing here shall waive the right of the Director to take action beyond the terms of the closure plan pursuant to the Comprehensive Environmental Response, Compensation and Liability Act of 1980, 42 U.S.C. §9601 et seq., as amended by the Superfund Amendments and Reauthorization Act of 1986, Pub. L. 99-499 ("CERCLA") or to take any other action pursuant to applicable Federal or State law, including but not limited to the right to issue a permit with terms and conditions requiring corrective action pursuant to Chapters 3734 or 6111 of the Revised Code; the right to seek injunctive relief, monetary penalties and punitive damages, to undertake any removal, remedial, and/or response action relating to the facility, and to seek recovery for any costs incurred by the Director in undertaking such actions.

You are notified that this action of the Director is final and may be appealed to the Environmental Board of Review pursuant to Section 3745.04 of the Ohio Revised Code. The appeal must be in writing and set forth the action complained of and the grounds upon which the appeal is based. It must be filed with the Environmental Board of Review within thirty (30) days after notice of the Director's action. A copy of the appeal must be served on the Director of the Ohio Environmental Protection Agency and the Environmental Enforcement Section of the Office of the Attorney General within three (3) days of filing with the Board. An appeal may be filed with the Environmental Board of Review at the following address: Environmental Board of Review, 236 East Town Street, Room 300, Columbus, Ohio 43266-0557.

When closure is completed, the Ohio Administrative Code Rule 3745-66-15 requires the owner or operator of a facility to submit to the Director of the Ohio EPA certification by the owner or operator and an independent registered professional engineer that the facility has been closed in accordance with the approved closure plan. The certification by the owner or operator shall include the statement found in OAC 3745-50-42(D). These certifications should be submitted to: Ohio Environmental Protection Agency, Division of Solid and Hazardous Waste Management, Attn: Thomas Crepeau, Program Planning and Management Section, P.O. Box 1049, Columbus, Ohio 43266-0149.

Sincerely,



Richard L. Shank, Ph.D.
Director

I certify this to be a true and accurate copy of the official document as filed in the records of the Ohio Environmental Protection Agency.

By: Mary Carter Date 11-16-89

RLS/RM/pas

cc: Randy Meyer, Ohio EPA, DSHWM
Joel Morbito, USEPA - Region V
Tom Crepeau, Ohio EPA, DSHWM
Dave Wertz, NEDO, Ohio EPA

Lisa Pierard, USEPA-Region V
Greg Taylor, NEDO, Ohio EPA

Ohio Environmental Protection Agency
ENTERED DIRECTOR'S JOURNAL

2012U

NOV 16 1989



State of Ohio Environmental Protection Agency

P.O. Box 1049, 1800 WaterMark Dr.
Columbus, Ohio 43266-0149

Richard F. Celeste
Governor

Francine

CLOSURE PLAN DISAPPROVAL
Issuance Date September 11, 1989
Effective Date October 11, 1989

CERTIFIED MAIL

September 11, 1989

Re: Closure Plan
UCAR Carbon Company, Inc.
OHD 004 167 383/02-18-0132

Mr. Nylek Hillson
UCAR Carbon Company, Inc.
P.O. Box 6087
Cleveland, OH 44101

Dear Mr. Hillson:

On March 15, 1989, UCAR Carbon Company, Inc. submitted to Ohio EPA a closure plan for hazardous waste container storage areas A, B, and C located at 11709 Madison Avenue, Lakewood, Ohio. The closure plan was submitted pursuant to Rule 3745-66-12 of the Ohio Administrative Code (OAC) in order to demonstrate that UCAR Carbon Company, Inc.'s proposal for closure complies with the requirements of OAC Rules 3745-66-11 and 3745-66-12.

The public was given the opportunity to submit written comments regarding the closure plan of UCAR Carbon Company, Inc. in accordance with OAC Rule 3745-66-12. The public comment period extended from March 30, 1989, to May 2, 1989. No comments were received by Ohio EPA in this matter.

Based upon review of the company's submittal and subsequent revisions, I conclude that the closure plan for the hazardous waste facility at UCAR Carbon Company, Inc. does not meet the performance standard contained in OAC Rule 3745-66-11 and does not comply with the pertinent parts of OAC Rule 3745-66-12.

The closure plan submitted to Ohio EPA by UCAR Carbon Company, Inc. is hereby disapproved (see Attachment A).

I certify this to be a true and accurate copy of the official document as filed in the records of the Ohio Environmental Protection Agency.

By: Dorothy Carver Date 10-13-89

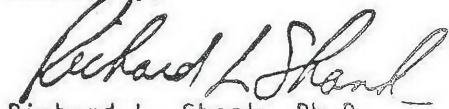
Ohio Environmental Protection Agency
ENTERED DIRECTOR'S JOURNAL

OCT 13 1989

You are notified that this action of the Director is issued as a proposed action pursuant to ORC Section 3745.07. This action will become final on the effective date indicated unless you or an objector files an appeal requesting an adjudication hearing within thirty (30) days of the date of issuance of this action. The adjudication hearing will be conducted in accordance with OAC Chapter 3745-47. The request for a hearing shall specify the issues of fact and law to be contested. Requests for hearings shall be sent to: Ohio Environmental Protection Agency, Hearing Clerk, 1800 WaterMark Drive, P.O. Box 1049, Columbus, OH 43266-0149.

A modified closure plan addressing the deficiencies enumerated in Attachment A must be submitted to the Director of the Ohio EPA for approval within thirty (30) days of the receipt of this letter in accordance with OAC 3745-66-12. The modified closure plan should be submitted to: Ohio Environmental Protection Agency, Division of Solid and Hazardous Waste Management, Attn: Thomas Crepeau, Manager, Data Management Section, P.O. Box 1049, Columbus, Ohio 43266-0149. A copy should also be sent to: Greg Taylor, Ohio EPA, Northeast District Office, 2110 E. Aurora Road, Twinsburg, Ohio 44087.

Sincerely,



Richard L. Shank, Ph.D.
Director

RLS/PV/ps

cc: DSHWM Central File, Ohio EPA
Lisa Plerard, USEPA, Region V
Greg Taylor, NEDO, Ohio EPA
Dave Wertz, NEDO, Ohio EPA
Paul Vandermeer, DSHWM, CO, Ohio EPA
Joel Morbito, USEPA, Region V

1933U

certify this to be a true and accurate copy of the official document as filed in the records of the Ohio Environmental Protection Agency.

By: Mary Cavin Date 10-13-89

Ohio Environmental Protection Agency
ENTERED DIRECTOR'S JOURNAL

OCT 13 1989

ATTACHMENT A

UCAR Carbon Company, Inc.
OH0004167383/02-18-0132

1. The final rinseate sample for each unit shall be composed of aliquots from each drum of rinseate. Alternatively, UCAR Carbon Co. may collect the rinseate in a single container or tank and collect one (1) rinseate sample. Also, the rinseate clean standard for chromium (storage area A only) shall be 0.05 mg/l, not 5.0 mg/l.
2. In analyzing rinseate samples, UCAR Carbon Co. shall use Method 6010 for chromium and Method 9040 for corrosivity where these analyses are required. These methods may be found in USEPA Publication SW-846, "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, Third Edition."
3. If there are any signs of visible soil contamination around any of the units, UCAR Carbon Co. shall sample these areas to determine if there has been a release from the unit(s) in question.

Because Storage Pad C did not have secondary containment, UCAR Carbon Co. shall collect at least ten (10) equally spaced, discrete soil samples - four(4) from each long side of the pad and one(1) from each short side - from around the pad and analyze them for all hazardous constituents stored on the pad. Sampling around the pad should be completed and the analytical results made available to Ohio EPA prior to the construction of the curbing necessary for decontamination of the pad.

Soil shall be considered contaminated if any hazardous constituent representative of the waste(s) stored in the unit in question is present above background concentrations. Ohio EPA considers background for non-naturally occurring hazardous constituents to be non-detection. UCAR may use one of the methods outlined in Attachment B to establish background for naturally occurring hazardous constituents.

If UCAR selects Alternative A from Attachment B for establishing the background level for naturally occurring compounds or elements in soils, UCAR shall select sixteen (16) background sampling points in consultation with Greg Taylor, Ohio EPA, NEDO. These points shall be selected to represent an area not directly affected by any waste activities. All points and sampling data from these points shall be reviewed and approved by Ohio EPA. Analytical results from these points shall be submitted to Greg Taylor, Ohio EPA, NEDO, within ten (10) days of receipt by UCAR. Ohio EPA may reject any sampling point.

If contamination is found, soil sampling shall continue until the full extent of contamination is defined.

I certify this to be a true and accurate copy of the official document as filed in the records of the Ohio Environmental Protection Agency.

By: Mary Caron Date 10-13-89

Ohio Environmental Protection Agency
ENTERED DIRECTOR'S JOURNAL

OCT 15 1989

4. UCAR's Part A Permit indicates that the following constituents were stored at the facility: chlorobenzene, hexachloroethane, tetrachloroethylene, and trichloroethylene. These constituents shall be included in any sample analyses performed during closure.
5. UCAR's certification statement shall follow the wording found in OAC 3745-50-42(D) verbatim.
6. The health and safety plan for Storage Area C indicates that sulfuric acid residues may be present; therefore, rinseates generated from Storage Area C shall be analyzed for corrosivity using Method 9040. This method may be found in USEPA Publication SW-846, "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, Third Edition."

1933U/22-23

I certify this to be a true and accurate copy of the official document as filed in the records of the Ohio Environmental Protection Agency.

By: Mary Cavan Date 10-13-89

Ohio Environmental Protection Agency
ENTERED DIRECTOR'S JOURNAL

OCT 15 1989

ATTACHMENT B

NATURALLY OCCURRING ELEMENTS OR COMPOUNDS

Alternative A - Soils containing naturally occurring elements in the area of the hazardous waste management unit shall be considered to be contaminated if concentrations in the soils exceed the mean of the background samples plus two standard deviations.

All metals analyses must be for total metals.

Alternative B - Soils containing RCRA-regulated metals shall be considered to be contaminated if concentrations in the soil exceed the upper limit of the range for Ohio farm soils, as given below:

<u>Metal</u>	<u>Range (Total Metal Concentration in ug/g)</u>
Cadmium	0 - 2.9
Chromium	4 - 23
Lead	9 - 39

(Source: Logan, T.J. and R.H. Miller, 1983. Background levels of Heavy Metals in Ohio Farm Soils. Research Circular 275, Ohio State University, Ohio Agricultural Research and Development Center, Wooster.)

All metals analyses must be for total metals.

Ohio EPA may reject any of the above alternatives based on site-specific information. Also, the Agency may accept alternate statistical methods if the owner/operator can demonstrate that the statistical method proposed is environmentally acceptable and is technically superior.

1370U/57

certify this to be a true and accurate copy of the official document as filed in the records of the Ohio Environmental Protection Agency.

By: Mary Carin Date 10-13-89

Ohio Environmental Protection Agency
ENTERED DIRECTOR'S JOURNAL

OCT 15 1989



State of Ohio Environmental Protection Agency

P.O. Box 1049, 1800 WaterMark Dr.
Columbus, Ohio 43266-0149

Ohio Environmental Protection Agency
ENTERED DIRECTOR'S JOURNAL

AUG 14 1989

Richard T. Celeste
Governor

CLOSURE PLAN APPROVAL

CERTIFIED MAIL

August 14, 1989

Re: Closure Plan
UCAR Carbon Company, Inc.
OHO D04 167 383/02-18-D132

Mr. Nyle Hillson
UCAR Carbon Company, Inc.
P.O. Box 6D87
Cleveland, Ohio 44101

RECEIVED
AUG 17 1989

OFFICE OF RCRA
WASTE MANAGEMENT DIVISION
EPA, REGION V

Dear Mr. Hillson:

On March 23, 1989, UCAR Carbon Company, Inc. submitted to Ohio EPA a closure plan for hazardous waste storage tank D located at 11709 Madison Avenue, Lakewood, Ohio. The closure plan was submitted pursuant to Rule 3745-66-12 of the Ohio Administrative Code (OAC) in order to demonstrate that UCAR Carbon Company, Inc.'s proposal for closure complies with the requirements of OAC Rules 3745-66-11 and 3745-66-12.

The public was given the opportunity to submit written comments regarding the closure plan of UCAR Carbon Company, Inc. in accordance with OAC Rule 3745-66-12. No comments were received by Ohio EPA in this matter.

Based upon review of the company's submittal, I conclude that, with modifications, the closure plan for the hazardous waste facility at UCAR Carbon Company, Inc. meets the performance standard contained in OAC Rule 3745-66-11 and complies with the pertinent parts of OAC Rule 3745-66-12.

The closure plan submitted to Ohio EPA by UCAR Carbon Company, Inc. is hereby approved with the following modifications:

1. The final rinseate sample shall be composed of aliquots from each drum of rinseate. Alternatively, UCAR Carbon Co. may collect the rinseate in a single container or tank and collect one (1) rinseate sample that represents the entire water column. The clean standard for phenol, formaldehyde, phthalic anhydride, and acetone shall be 1 mg/l.
2. If there are any signs of visible soil contamination around Tank D, UCAR Carbon Co. shall sample these areas to determine if there has been a release. Soil shall be considered contaminated and must be removed as hazardous waste if any non-naturally occurring hazardous constituents representative of the waste(s) stored in Tank D are present above its analytical detection limit.

If contamination is found, soil sampling shall continue until the full extent of contamination is defined.

I certify this to be a true and accurate copy of the official document as filed in the records of the Ohio Environmental Protection Agency.

By: *Paul Evans* Date: 8-14-89

3. UCAR's certification statement shall follow the wording found in OAC 3745-50-42(D) verbatim.
4. In order to characterize the resin waste more accurately, UCAR Carbon Co. shall analyze the samples from the roll-off box individually, for a total of five (5) discrete samples. UCAR shall submit a sketch of the roll-off box showing sampling locations to Greg Taylor, Ohio EPA, NEDO, at least ten (10) days before any samples are taken.
5. UCAR Carbon Co. shall contact Greg Taylor, Ohio EPA, NEDO, at least five (5) business days in advance of crucial activities, such as rinse water sampling, so that an inspector may be present to observe these activities and collect split samples, if necessary.
6. Responses to Modifications 1-5 above shall be submitted for review and approval to Greg Taylor, Ohio EPA, NEDO, and Randy Meyer, Ohio EPA, CO, within fifteen (15) days of receipt of this letter.

Notwithstanding compliance with the terms of the closure plan, the Director may, on the basis of any information that there is or has been a release of hazardous waste, hazardous constituents, or hazardous substances into the environment, issue an order pursuant to Section 3734.20 et seq. of the Revised Code or Chapters 3734 or 6111 of the Revised Code requiring corrective action or such other response as deemed necessary; or initiate appropriate action; or seek any appropriate legal or equitable remedies to abate pollution or contamination or to protect public health or safety or the environment.

Nothing herein shall waive the right of the Director to take action beyond the terms of the closure plan pursuant to the Comprehensive Environmental Response, Compensation and Liability Act of 1980, 42 U.S.C. §9601 et seq., as amended by the Superfund Amendments and Reauthorization Act of 1986, Pub. L. 99-499 ("CERCLA") or to take any other action pursuant to applicable Federal or State law, including but not limited to the right to issue a permit with terms and conditions requiring corrective action pursuant to Chapters 3734 or 6111 of the Revised Code; the right to seek injunctive relief, monetary penalties and punitive damages, to undertake any removal, remedial, and/or response actions relating to the facility, and to seek recovery for any costs incurred by the Director in undertaking such actions.

You are notified that this action of the Director is final and may be appealed to the Environmental Board of Review pursuant to Section 3745.04 of the Ohio Revised Code. The appeal must be in writing and set forth the action complained of and the grounds upon which the appeal is based. It must be filed with the Environmental Board of Review within thirty (30) days after notice of the Director's action. A copy of the appeal must be served on the Director of the Ohio Environmental Protection Agency and the Environmental Enforcement Section of the Office of the Attorney General within three (3) days of filing with the Board. An appeal may be filed with the Environmental Board of Review at the following address: Environmental Board of Review, 236 East Town Street, Room 300, Columbus, Ohio 43266-0557.

I certify this to be a true and accurate copy of the official document as filed in the records of the Ohio Environmental Protection Agency.

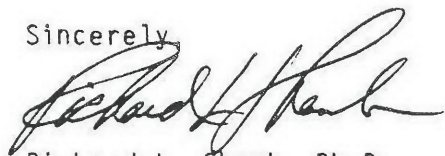
By: R. E. Jones Date 8-14-89

Ohio Environmental Protection Agency
ENTERED DIRECTOR'S JOURNAL

AUG 14 1989

When closure is completed, the Ohio Administrative Code Rule 3745-66-15 requires the owner or operator of a facility to submit to the Director of the Ohio EPA certification by the owner or operator and an independent registered professional engineer that the facility has been closed in accordance with the approved closure plan. The certification by the owner or operator shall include the statement found in OAC 3745-50-42(D). These certifications should be submitted to: Ohio Environmental Protection Agency, Division of Solid and Hazardous Waste Management, Attn: Thomas Crepeau, Program Planning and Management Section, P.O. Box 1049, Columbus, Ohio 43266-0149.

Sincerely,



Richard L. Shank, Ph.D.
Director

RLS/RM/pas

cc: Paul Vandermeer, Ohio EPA, DSHWM
Randy Meyer, Ohio EPA, DSHWM
Lisa Pierard, US EPA-Region V
Joel Morbito, USEPA - Region V
Tom Crepeau, Ohio EPA, DSHWM Central File
Greg Taylor, NEDO, Ohio EPA

1904U

I certify this to be a true and accurate copy of the official document as filed in the records of the Ohio Environmental Protection Agency.

by: Pax Ewan Date 8-14-89

Ohio Environmental Protection Agency
ENTERED DIRECTOR'S JOURNAL

AUG 14 1989



State of Ohio Environmental Protection Agency

P.O. Box 1049, 1800 WaterMark Dr.
Columbus, Ohio 43266-0149

Richard F. Celeste
Governor

Franchise

March 28, 1989

Re: Union Carbide/Lakewood
U.S. EPA ID No.: OHD004167383
Ohio Permit No.: 02-18-0132
Closure Plan

Union Carbide/Lakewood
Attn: Mr. Nyle Hillson
P.O. Box 6087
Cleveland, Ohio 44101

Dear Mr. Hillson:

A public notice acknowledging the Ohio EPA's receipt of a closure plan for Union Carbide/Lakewood located at 11709 Madison Avenue, Lakewood, Ohio will appear the week of April 3, 1989, in The Plain Dealer, Cleveland, Ohio. The Director of the Ohio EPA will act upon the closure plan request following the close of the public comment period, May 9, 1989.

Copies of the closure plan will be available for public review at the Lakewood Public Library, 15425 Detroit Avenue, Lakewood, Ohio 44107 and the Ohio EPA, Northeast District Office, 2110 East Aurora Road, Twinsburg, Ohio 44087.

Please contact me at (614) 644-2934, if you have any questions concerning this matter.

Very truly yours,

Thomas E. Crepeau

Thomas E. Crepeau, Manager
Data Management Section
Division of Solid & Hazardous Waste Management

TEC/dhs

cc: Lisa Pierard, U.S. EPA, Region V
Randy Meyer, Ohio EPA, DSHWM, TA&ES
Greg Taylor, Ohio EPA, DSHWM, NEDO

2314R(27)



PUBLIC NOTICE

Cuyahoga County

RECEIPT OF HAZARDOUS WASTE CLOSURE PLAN

For: Union Carbide/Lakewood, 11709 Madison Avenue, Lakewood, Ohio, U.S.
EPA ID No.: DHD004167383, Ohio Permit No.: 02-18-0132. Pursuant to OAC Rule 3745-66-10 thru 17 and 40 CFR, Subpart G, 265.110 thru 117, the Ohio Environmental Protection Agency (Ohio EPA) is hereby giving notice of the receipt of a Hazardous Waste Facility Closure Plan for Storage Tank-D for the above referenced facility. Ohio EPA is also giving notice that this facility is subject to a determination concerning corrective action, a requirement under the Hazardous and Solid Waste Amendments of 1984, which concerns any possible uncorrected releases of hazardous waste or hazardous constituents to the environment from any current or previous solid waste management units at the above facility. A corrective action determination is required from hazardous waste facilities intending to close.

Copies of the facility's Closure Plan will be available for public review at the Lakewood Public Library, 15425 Detroit Avenue, Lakewood, Ohio 44107 and the Ohio EPA, Northeast District Office, 2110 East Aurora Road, Twinsburg, Ohio 44087. Comments concerning the Closure Plan or factual information concerning any releases of hazardous waste or hazardous waste constituents by the above facility requiring corrective action should be submitted within 30 days of this notice to: Ohio Environmental Protection Agency, Div. of Solid & Hazardous Waste Mgmt., Data Management Section, Attn: Thomas E. Crepeau, Box 1049, Columbus, Ohio 43266-0149.

RECEIVED
MAR 23 1989
OFFICE OF RCRA
Waste Management Division
U.S. EPA, REGION V

March 21, 1989

Ms. Francine Norling
USEPA, Region 5
230 South Dearborn Street, 5HR-13
Chicago, Illinois 60604

Dear Ms. Norling:

Enclosed please find UCAR Carbon Company's Closure Plan for our hazardous waste Tank D located in Lakewood, Ohio. We submit this plan pursuant to your request for our hazardous waste permit application. It is our intention to be removed from interim and permitting status with the submission of this plan, and with those you received on 3/15/89, regarding our three container storage areas.

We will operate the container storage areas, known as Pad A and B, under generator provisions of RCRA following closure certification. The hazardous waste storage areas known as Pad C and Tank D will not be used for hazardous waste storage.

We are looking forward to your comments. Please do not hesitate to call me.

Sincerely,

Nyle Hillson

Nyle Hillson
Environmental Coordinator

cc: Greg Taylor -- OEPA Northeast District
Paul Vandermeer -- OEPA

GRAFOIL®
Flexible Graphite

Direct Dial Number:

Sales Office: P.O. Box 94637, Cleveland, OH 44101 U.S.A. Phone: (216) 529-3900, (800) 822-4322 Telefax: (216) 529-3922
Telex: 810 421 0047 UC ELECT UD Manufacturing Office: P.O. Box 6087, Cleveland, OH 44101 U.S.A. Telefax: (216) 529-3888

GRAFOIL® is a registered trademark of UCAR Carbon Company Inc.



State of Ohio Environmental Protection Agency

P.O. Box 1049, 1800 WaterMark Dr.
Columbus, Ohio 43266-0149

Richard F. Celeste
Governor

Francine

March 20, 1989

Re: Union Carbide/Lakewood
U.S. EPA ID No.: OHD004167383
Ohio Permit No.: 02-18-0132
Closure Plan

Union Carbide/Lakewood
Attn: Mr. Nyle Hillson
P.O. Box 6087
Cleveland, Ohio 44101

Dear Mr. Hillson:

A public notice acknowledging the Ohio EPA's receipt of a closure plan for Union Carbide/Lakewood located at 11709 Madison Avenue, Lakewood, Ohio will appear the week of March 27, 1989, in The Plain Dealer, Cleveland, Ohio. The Director of the Ohio EPA will act upon the closure plan request following the close of the public comment period, May 2, 1989.

Copies of the closure plan will be available for public review at the Lakewood Public Library, 15425 Detroit Avenue, Lakewood, Ohio 44107 and the Ohio EPA, Northeast District Office, 2110 East Aurora Road, Twinsburg, Ohio 44087.

Please contact me at (614) 644-2934, if you have any questions concerning this matter.

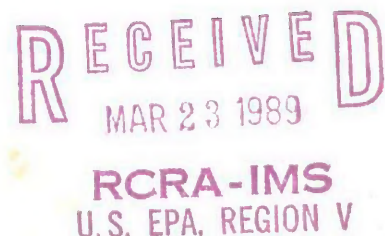
Very truly yours,

Thomas E. Crepeau, Manager
Data Management Section
Division of Solid & Hazardous Waste Management

TEC/dhs

cc: Lisa Pierard, U.S. EPA, Region V
Randy Meyer, Ohio EPA, DSHWM, TA&ES
Greg Taylor, Ohio EPA, DSHWM, NEDO

2314R(23)



PUBLIC NOTICE

Cuyahoga County

RECEIPT OF HAZARDOUS WASTE CLOSURE PLAN

For: Union Carbide/Lakewood, 11709 Madison Avenue, Lakewood, Ohio, U.S.
EPA IO No.: OHD004167383, Ohio Permit No.: 02-18-0132. Pursuant to OAC Rule 3745-66-10 thru 17 and 40 CFR, Subpart G, 265.110 thru 117, the Ohio Environmental Protection Agency (Ohio EPA) is hereby giving notice of the receipt of a Hazardous Waste Facility Closure Plan for a container storage area for the above referenced facility. Ohio EPA is also giving notice that this facility is subject to a determination concerning corrective action, a requirement under the Hazardous and Solid Waste Amendments of 1984, which concerns any possible uncorrected releases of hazardous waste or hazardous constituents to the environment from any current or previous solid waste management units at the above facility. A corrective action determination is required from hazardous waste facilities intending to close.

Copies of the facility's Closure Plan will be available for public review at the Lakewood Public Library, 15425 Detroit Avenue, Lakewood, Ohio 44107 and the Ohio EPA, Northeast District Office, 2110 East Aurora Road, Twinsburg, Ohio 44087. Comments concerning the Closure Plan or factual information concerning any releases of hazardous waste or hazardous waste constituents by the above facility requiring corrective action should be submitted within 30 days of this notice to: Ohio Environmental Protection Agency, Div. of Solid & Hazardous Waste Mgmt., Data Management Section, Attn: Thomas E. Crepeau, Box 1049, Columbus, Ohio 43266-0149.



CARBON COMPANY INC.
A UNION CARBIDE COMPANY

March 13, 1989

RECEIVED
MAR 15 1989

Ms. Francine Norling
USEPA, Region 5
230 South Dearborn Street
Chicago, Illinois 60604

OFFICE OF RCRA
Waste Management Division
U.S. EPA, REGION V

Dear Ms. Norling:

Enclosed please find UCAR Carbon Company's Closure Plans for our hazardous waste container storage areas located in Lakewood, Ohio. We submit these plans pursuant to your requests for our hazardous waste permit application. It is our intention to be removed from interim and permitting status with these submissions.

We will operate the container storage areas, known as Pad A and B, under generator provisions of RCRA following closure certification. The hazardous waste storage areas known as Pad C and Tank D will not be used for hazardous waste storage.

Per our conversation of 9 March, 1989, we will submit the Closure Plan for Tank D during the week of 20 March, 1989. This delay is due to logistical and technical difficulties incurred during the preparation for the Tank D Closure Plan. We hope that this has not inconvenienced you.

We are looking forward to your comments. Please do not hesitate to call me.

Sincerely,

Nyle Hillson

Nyle Hillson

cc: Greg Twinsburg - OEPA Northeast District
Paul VanDeMere - OEPA

RECEIVED

MAR 15 1989

GRAFOIL®
Flexible Graphite

COPY

U.S. EPA REGION V
SWB - PMB

Direct Dial Number:

Sales Office: P.O. Box 94637, Cleveland, OH 44101 U.S.A. Phone: (216) 529-3900, (800) 822-4322 Telefax: (216) 529-3922
Telex: 810 421 0047 UC ELECT UD **Manufacturing Office:** P.O. Box 6087, Cleveland, OH 44101 U.S.A. Telefax: (216) 529-3888

GRAFOIL® is a registered trademark of UCAR Carbon Company Inc.



RECEIVED
MAR 15 1989

March 10, 1989
OFFICE OF RCRA
Waste Management Division
U.S. EPA, REGION V

Ms. Francine Norling
USEPA, Region 5
230 South Dearborn Street, 5HR-13
Chicago, Illinois 60604

Dear Ms. Norling:

This letter will confirm my telephone conversation on the afternoon of 3/8/89 with Ms. Lisa Pierard, in your office, regarding UCAR Carbon Company's (EPA I.D. No. OHD004167383) submittal of Closure Plans for its 4 hazardous waste management units.

As discussed, UCAR will submit plans for its Waste Pads A, B, and C on March 15, 1989 and the plan for Tank D will follow within a week, by March 22, 1989. The reason for the delay involves additional time required by our contractor writing the plan to make revisions to the draft copy which UCAR has been reviewing this week.

Ms. Pierard advised me that the week extension would be acceptable to USEPA. She was advised that OEPA also received a call on 3/8/89, and had agreed to the one week extension for Tank D Closure Plan.

Yours truly,

N. R. Hillson
Environmental Coordinator

GRAFOIL®
Flexible Graphite

Direct Dial Number:

Sales Office: P.O. Box 94637, Cleveland, OH 44101 U.S.A. Phone: (216) 529-3900, (800) 822-4322 Telefax: (216) 529-3922
Telex: 810 421 0047 UC ELECT UD Manufacturing Office: P.O. Box 6087, Cleveland, OH 44101 U.S.A. Telefax: (216) 529-3888

GRAFOIL® is a registered trademark of UCAR Carbon Company Inc.

11 JAN 1989

5NR-13

Mr. Hyle R. Hillson
Environmental Coordinator
Union Carbide Corporation
P. O. Box 6087
Cleveland, Ohio 44101

RE: Union Carbide
Closure Plan
Lakewood, Ohio
OHD 004 167 383

Dear Mr. Hillson,

On January 4, 1989, we discussed your proposal to submit a Resource Conservation and Recovery Act (RCRA) closure plan by March 15, 1989, for the RCRA storage areas at Union Carbide's Lakewood, Ohio facility. Since our initial conversations regarding this facility in September 1988, you have stated that Union Carbide fully intends to submit a quality closure plan in compliance with RCRA requirements. Therefore, I do not object to the March 15, 1989, submittal date for the closure plan. However, the Ohio Environmental Protection Agency (OEPA) must also be contacted regarding the submittal date. If the OEPA requests submittal of the closure plan by an earlier date, then Union Carbide should comply with such a request.

If you have any further questions in this matter, please contact me at (312) 886-6198.

Sincerely,

Francine P. Norling
Environmental Scientist

cc: Ed Lim, OEPA
Ed Kitchen, OEPA
Debbie Berg, OEPA-NEDO



UNION CARBIDE CORPORATION
CARBON PRODUCTS DIVISION

11709 MADISON AVENUE, CLEVELAND, OHIO 44107
• TELEPHONE: 216-226-2824

ADDRESS REPLY TO:

P.O. BOX 6087
CLEVELAND, OH 44116

Ms. Francine Norling
USEPA, Region 5
230 South Dearborn Street
Chicago, Illinois 60604

December 20, 1988

RE: Facility Closure Plan

Dear Ms. Norling:

I am writing this letter to confirm Union Carbide's commitment to submit a quality Closure Plan for this facility's RCRA hazardous waste management units. Since my first letter to you on 9/27/88, we have proceeded steadily on that course.

You should agree that it would be in the U.S. and Ohio EPA's best interest for Union Carbide to provide a Closure Plan which addresses all required aspects of the closure activity in full detail. It is Union Carbide's firm intention to do just that. However, it has become evident to us that submitting such a detailed plan by our requested filing date of January 15, 1989, will not be feasible. It is with regret that I must ask for your consideration to extend our filing deadline to enable us time to complete preparation of a proper document for your agency's review.

As my letter of 9/27/88 stated, this facility projected a three-step approach for completion of its Closure Plan. We have completed the first two steps, which consisted of bidding the work and selecting a vendor, and have begun work on the last step - plan preparation. The selected vendor is a very competent and environmentally experienced consulting firm. They were specifically chosen because of their capacity to provide the type of in-depth Closure Plan your agency requires.

It would behoove us both to allow sufficient time for this consultant to adequately complete a Closure Plan for this facility. Based on their projections, this can be accomplished by March 15, 1989. Please advise me if a Closure Plan submittal by this date is acceptable.

Yours truly,

Nyle R. Hillson
Environmental Coordinator

RECEIVED MAY 05 1991
WMD RCRA
RECORD CENTER *Part B*

WMD

UCAR CARBON COMPANY INC. 39 OLD RIDGEBURY ROAD, DANBURY, CT 06817-0001
PHONE (203) 794-7286

R. ESTERA
VICE PRESIDENT &
CHIEF FINANCIAL OFFICER

April 9, 1991

VIA CERTIFIED MAIL

RETURN RECEIPT REQUESTED

Director
Ohio Environmental Protection Agency
RCRA Enforcement Section
Division of Solid & Hazardous Waste Management
P.O. Box 1049
1800 Water Mark Drive
Columbus, OH 43266-0149

RECEIVED

APR 19 1991

U. S. EPA REGION 5
OFFICE OF REGIONAL ADMINISTRATOR

Gentlemen:

Pursuant to Chapter 3745-55-43(F)(6), UCAR Carbon Company Inc. hereby gives notice of its intent to establish alternate financial assurance for closure or post-closure care for the following UCAR Carbon Company Inc. facilities:

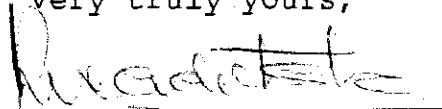
Name	-	UCAR Carbon Company Inc.
Address	-	Lakewood, Ohio
EPA #	-	OHD004167383
Ohio Permit #	-	02-18-0132
Closure	-	\$150,000
Post Closure	-	\$0

Name	-	UCAR Carbon Company Inc.
Address	-	Parma, Ohio
EPA #	-	OHD003926748
Ohio Permit #	-	02-18-0104
Closure	-	\$4,000
Post Closure	-	\$0

In prior years, the financial assurance for these facilities was provided through the provisions of Chapter 3745-55-43(F) by Union Carbide Chemicals & Plastic Company Inc. ("UCC&P"), of whom UCAR Carbon Company Inc. was a wholly-owned subsidiary. UCAR Carbon Company Inc. is no longer a wholly-owned subsidiary of UCC&P. Effective February 25, 1991, UCAR Carbon Company Inc. is owned jointly by Union Carbide Corporation (50%) and Mitsubishi

Corporation of Tokyo, Japan (50%). Accordingly, UCAR Carbon Company Inc. will be providing alternate financial assurance for these facilities on or before May 1, 1991, as required by Chapter 3745-55-43(F)(6).

Very truly yours,

A handwritten signature in dark ink, appearing to read "R. Estera", written over a horizontal line.

R. Estera
Vice President and
Chief Financial Officer

cc: Regional Administrator
U.S. Environmental Protection Agency
Region V
230 South Dearborn Street
Chicago, IL 60604

UNION CARBIDE CHEMICALS AND PLASTICS COMPANY INC.

39 OLD RIDGEBURY ROAD

DANBURY, CT 06817-0001

CERTIFIED MAIL

March 30, 1990

RETURN RECEIPT REQUESTED

Director
Ohio Environmental Protection Agency
RCRA Enforcement Section
Division of Solid & Hazardous Waste Management
P. O. Box 1049
1800 Water Mark Drive
Columbus, OH 43266-0149

Gentlemen:

I am the chief financial officer of Union Carbide Chemicals and Plastics Company Inc., 39 Old Ridgebury Road, Danbury, Connecticut 06817. This letter is in support of this firm's use of the financial test to demonstrate financial assurance, as specified in Chapters 3745-55 and 3745-66 of the Administrative Code.

1. This firm is the owner or operator of the following facilities for which financial assurance for closure or post-closure care is demonstrated through the financial test specified in Chapters 3745-55 and 3745-66 of the Administrative Code. The current closure and/or post-closure cost estimates covered by the test are shown for each facility:

- None -

2. This firm guarantees, through the corporate guarantee specified in Chapters 3745-55 and 3745-66 of the Administrative Code, the closure or post-closure care of the following facilities owned or operated by subsidiaries of this firm. The current cost estimates for the closure or post-closure care so guaranteed are shown for each facility:

✓ OHD 004 167 383 ORIGINAL
OHD 003 926 748
OHD 017 998 022

RECEIVED
APR 11 1990
OFFICE OF RCRA
WASTE MANAGEMENT
DIVISION
EPA REGION V

Name - UCAR Carbon Company, Inc.
Address - Lakewood, Ohio
EPA # - OH0004167383
Ohio Permit # - 02-18-0132
Closure - \$ 42,000
Post-Closure - \$ 118,000

Name - UCAR Carbon Company Inc.
Address - Parma, Ohio
EPA # - OHD003926748
Ohio Permit # - 02-18-0104
Closure - \$ 173,200
Post-Closure - \$ 0

Name - Amko Service Company
Address - Dover, Ohio
EPA # - OHD17998022
Closure - \$25,000
Post-Closure - \$35,000

3. In States where U.S. EPA or a State so authorized is administering the financial requirements of Subpart H of 40 C.F.R. Parts 264 and 265, this firm, as owner or operator or guarantor, is demonstrating financial assurance for the closure or post-closure care of the following facilities through the use of a test equivalent or substantially equivalent to the financial test specified in Chapter 3745-55 and 3745-66 of the Administrative Code. The current closure and/or post-closure cost estimates covered by such a test are shown for each facility:

Name - Union Carbide Chemicals and Plastics
Company Inc.
Address - Hahnville, Louisiana
EPA # - LAD041581422
Closure - \$ 381,465
Post-Closure - \$1,025,440

Name - Union Carbide Chemicals and Plastics
Company Inc.
Specialty Chemicals Division
Address - So. Charleston, WV
EPA # - WVD005005483
WVD980554885
Closure - \$7,954,194
Post-Closure - \$2,083,266

Name	- Union Carbide Chemicals and Plastics Company Inc.
Address	- Woodbine, Georgia
EPA #	- GAD981235294
Closure	- \$0
Post-Closure	- \$2,569,050
Name	- Union Carbide Chemicals and Plastics Company Inc. Specialty Chemicals Division
Address	- Sistersville, WV
EPA #	- WVD004325353
Closure	- \$1,121,040
Post-Closure	- \$1,598,520
Name	- Union Carbide Chemicals and Plastics Company Inc. Specialty Chemicals Division
Address	- Nitro, WV
EPA #	- WVD000739722
Closure	- \$ 0
Post-Closure	- \$ 996,480
Name	- Union Carbide Chemicals and Plastics Company Inc. Engineering, Manufacturing and Technology Services (Technical Center)
Address	- So. Charleston, WV
EPA #	- WVD060682291
Closure	- \$ 88,568
Post-Closure	- \$ 0
Name	- Union Carbide Chemicals and Plastics Company Inc. Polyolefins Division
Address	- Port Lavaca, Texas
EPA #	- TXD041515420
Closure	- \$2,428,609
Post-Closure	- \$2,526,181
Corrective Action	- \$3,281,118
Name	- Union Carbide Chemicals and Plastics Company Inc. Solvents & Coating Materials Division
Address	- Brownsville, Texas
EPA #	- TXD008114092
Closure	- \$ 159,852
Post-Closure	- \$3,253,092

Name - Union Carbide Chemicals and Plastics
Company Inc.
Solvents & Coating Materials Division
Address - Texas City, Texas
EPA # - TXD000461533
- TXD980626782
Closure - \$514,410
Post-Closure - \$671,659
Corrective
Action - \$4,846,422

4. This firm is the owner or operator of the following hazardous waste management facilities for which financial assurance for closure or, if a disposal facility, post-closure care is not demonstrated to Ohio EPA through the financial test or any other financial assurance mechanism specified in Chapters 3745-55 and 3745-66 of the Administrative Code or equivalent or substantially equivalent State mechanisms. The current closure and/or post-closure cost estimates not covered by such financial assurance are shown for each facility:

- None -

This firm is required to file a form 10K with the Securities and Exchange Commission (SEC) for the latest fiscal year.

The fiscal year of this firm ends on December 31. The figures for the following items marked with an asterisk are derived from this firm's independently audited, year-end financial statements for the latest completed fiscal year, ended December 31, 1989.

ALTERNATIVE II

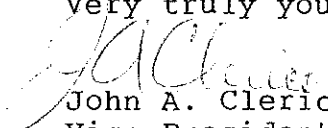
	(MM \$)
1. Sum of current closure and post-closure cost estimates. (Total of all cost estimates shown in the four paragraphs above.)	35.9

2. Current bond rating of most recent issuance of this firm and name of rating services (senior debt).	BBB Standard and Poor's; Baa2 Moody's Investor Services
3. Date of issuance of bond.	1/16/86
4. Date of maturity of bond.	Senior Notes due 1996; Senior Debentures due 2006.
*5. Tangible net worth (including closure and post-closure cost estimates included in "total liabilities" on balance sheet.	\$2,282
*6. Total assets in U.S. (required only if less than 90% of firm's assets are located in the U.S.)	\$5,771
	<u>YES</u> <u>NO</u>
7. Is line 5 at least \$10 million?	X
8. Is line 5 at least 6 times line 1?	X
*9. Are at least 90% of firm's assets located in the U.S.? If not, complete line 10.	X
10. Is line 6 at least 6 times line 1?	X

I hereby certify that, with the exceptions of paragraphs 1a and 3a, the wording of this letter is identical to the wording specified in paragraph (F) of rule 3745-55-51 of the Administrative Code as such regulations were constituted on the date shown immediately below.

March 30, 1990

Very truly yours,


John A. Clerico
Vice President, Treasurer and
Principal Financial Officer

Regional Administrator
U.S. Environmental Protection Agency
Region V
230 South Dearborn Street
Chicago, IL 60604

0676R



Certified Public Accountants

One Plaza West
100 Mill Plain Road
Danbury, CT 06811

The Board of Directors
Union Carbide Chemicals and Plastics Company Inc.:

We have audited, in accordance with generally accepted auditing standards, the consolidated balance sheet of Union Carbide Chemicals and Plastics Company Inc. and subsidiaries (the "Company") as of December 31, 1989 and the related consolidated statements of income, stockholder's equity and cash flows for the year then ended, and have issued our report thereon dated February 26, 1990.

In accordance with Subpart H of Title 40 CFR Parts 264 and 265 of the Code of Federal Regulations, we compared the data in Items 5, 6 and 9 of the letter from the Vice President, Treasurer and Principal Financial Officer dated March 30, 1990 in support of the Company's use of the financial test to demonstrate financial assurance, as specified in such regulations, with the audited financial statements.

In connection with the procedures referred to in the paragraph above, no matters came to our attention that caused us to believe that the specified data should be adjusted.

We understand that this report is intended solely to assist you in evaluating the Company's adherence to the requirements of Subpart H of Title 40 CFR Parts 264 and 265 of the Code of Federal Regulations and should not be used for any other purpose.

KPMG Peat Marwick

March 30, 1990



Member Firm of
Klynveld Peat Marwick Goerdeler

UNION CARBIDE CHEMICALS AND PLASTICS COMPANY INC.

39 OLD RIDGEBURY ROAD

DANBURY, CT 06817-0001

CORPORATE GUARANTEE FOR CLOSURE

AND

POST-CLOSURE CARE (OHIO)

Guarantee made this March 30, 1990 by Union Carbide Chemicals and Plastics Company Inc., a business corporation organized under the laws of the State of New York, herein referred to as guarantor, to the Ohio Environmental Protection Agency, obligee, on behalf of our subsidiaries UCAR Carbon Company Inc., of Lakewood, Ohio and Parma, Ohio and Union Carbide Industrial Gases, Inc. (Amko Service Company) of Dover, Ohio.

Recitals

1. Guarantor meets or exceeds the financial test criteria and agrees to comply with the reporting requirements for guarantors as specified in Paragraph (F) of rules 3745-55-43 and 3745-55-45 of the Administrative Code or Paragraph (E) of rules 3745-66-43 and 3745-66-45 of the Administrative Code.
2. UCAR Carbon Company Inc., and Amko Service Company own or operate the following hazardous waste management facilities covered by this guarantee:

Name	- UCAR Carbon Company Inc.
Address	- Lakewood, Ohio
EPA #	- OH0004167383
Ohio Permit #	- 02-18-0132
Closure	- \$ 42,000
Post-Closure	- \$ 118,000

Name	- UCAR Carbon Company Inc.
Address	- Parma, Ohio
EPA #	- OHD003926748
Ohio Permit #	- 02-18-0104
Closure	- \$ 173,200
Post-Closure	- \$ 0

Name - Amko Service Company
Address - Dover, Ohio
EPA # - OHD17998022
Closure - \$25,000
Post-Closure - \$35,000

3. "Closure plans" and "post-closure plans" as used below refer to the plans maintained as required by Chapters 3745-55 and 3745-66 of the Administrative Code for the closure and post closure care of facilities as identified above.
4. For value received from UCAR Carbon Company Inc. and Amko Service Company, guarantor guarantees to Ohio EPA that in the event that UCAR Carbon Company Inc and/or Amko Service Company fails to perform "closure and post-closure care" of the above facilities in accordance with the closure or post-closure plans and other permit or interim status requirements whenever required to do so, the guarantor shall do so or establish a trust fund as specified in Chapters 3745-55 and 3745-66 of the Administrative Code as applicable, in the name of UCAR Carbon Company Inc and/or Amko Service Company in the amount of the current closure or post-closure cost estimates as specified in Chapters 3745-55 and 3745-66 of the Administrative Code.
5. Guarantor agrees that if, at the end of any fiscal year before termination of this guarantee, the guarantor fails to meet the financial test criteria, guarantor shall send within 90 days, by certified mail, notice to the Director, Ohio EPA and to UCAR Carbon Company Inc. and Amko Service Company that he intends to provide alternate financial assurance as specified in Chapters 3745-55 and 3745-66 of the Administrative Code as applicable, in the name of UCAR Carbon Company Inc. Within 120 days after the end of such fiscal year, the guarantor shall establish such financial assurance unless UCAR Carbon Company Inc. and/or Amko Service Company has done so.
6. The guarantor agrees to notify the Director by certified mail, of a voluntary or involuntary proceeding under Title 11 (Bankruptcy), U.S. Code, naming guarantor as debtor, within 10 days after commencement of the proceedings.
7. Guarantor agrees that within 30 days after notified by the Director of a determination that guarantor no longer meets the financial test criteria or that he is disallowed from continuing as a guarantor of closure or post-closure care, he shall establish alternate financial assurance as specified in Chapters 3745-55 or 3745-66 of the Administrative Code as applicable, in the name of UCAR Carbon Company Inc. and Amko Service Company or unless UCAR Carbon Company Inc. and/or Amko Service Company has done so.

8. Guarantor agrees to remain bound under this guarantee notwithstanding any or all of the following: amendment or modification of the closure or post-closure plan, amendment or modification of the permit, the extension or reduction of the time of performance of closure or post-closure, or any other modification or alteration of an obligation of the owner or operator pursuant to Chapters 3745-55 or 3745-66 of the Administrative Code.
9. Guarantor agrees to remain bound under the guarantee for so long as UCAR Carbon Company Inc. and Amko Service Company must comply with the applicable financial assurance requirements of Chapters 3745-55 or 3745-66 of the Administrative Code for the above-listed facilities, except that guarantor may cancel this guarantee by sending notice by certified mail to the Director and to UCAR Carbon Company Inc. and Amko Service Company such cancellation to become effective no earlier than 120 days after receipt of such notice by both Ohio EPA and UCAR Carbon Company Inc. and Amko Service Company as evidenced by the return receipts.
10. Guarantor agrees that if UCAR Carbon Company Inc. and/or Amko Service Company fails to provide alternate financial assurance as specified in Chapters 3745-55 or 3745-66 of the Administrative Code as applicable, and obtain written approval of such assurance from the Director within 90 days after a notice of cancellation by the guarantor is received by the Director from guarantor, guarantor shall provide such alternate financial assurance in the name of UCAR Carbon Company Inc. and/or Amko Service Company.
11. Guarantor expressly waives notice of acceptance of this guarantee by the Ohio EPA or by UCAR Carbon Company Inc. and Amko Service Company. Guarantor also expressly waives notice of amendments or modifications of the closure and/or post-closure plan and of amendments or modifications of the facility permits.

I hereby certify that the wording of this guarantee is identical to the wording specified in Paragraph (H) of rule 3745-55-51 of the Administrative Code as such regulations were constituted on the date first above written.

Effective Date:

(Name of Guarantor):

(Authorized signature for guarantor):

(Name of person signing):

(Title of person signing):

March 30, 1990

UNION CARBIDE CHEMICALS
AND PLASTICS COMPANY INC.

John A. Clerico
Vice President, Treasurer
and Principal Financial
Officer

Signature of witness or notary:

Ramona E. Trautlein
RAMONA E. TRAUTLEIN
NOTARY PUBLIC
MY COMMISSION EXPIRES MARCH 31, 1991

0708R

Handwritten:
Jean
Per. send copies to the
3 per. files
Thursdays

UNION CARBIDE CORPORATION 39 OLD RIDGEBURY ROAD, DANBURY, CT 06817-0001

CAROLYN A. O'BOYLE
MANAGER
BANKING DEPARTMENT

O: WMD -
CC: RF

June 13, 1989

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Director
Ohio Environmental Protection Agency
RCRA Enforcement Section
Division of Solid and Hazardous Waste Management
P.O. Box 1049
1800 Water Mark Drive
Columbus, OH 43266-0149

Gentlemen:

On May 16, 1989, J. Clayton Stephenson, Vice Chairman, Chief Financial and Administrative Officer of Union Carbide Corporation (UCC), executed a letter in support of UCC's use of the financial test (Alternative II) and Corporate Guarantee to demonstrate financial assurance. The facilities in your state are shown below:

Name	- L-Tec Company
Address	- Ashtabula, Ohio
EPA #	- OH0000821454
Ohio Permit #	- 02-04-0404
Closure	- \$ 500,000
Post-Closure	- \$ 550,000

Name	- UCAR Carbon Company, Inc.
Address	- Lakewood, Ohio
EPA #	- OH0004167383
Ohio Permit #	- 02-18-0132
Closure	- \$ 191,000
Post-Closure	- \$ 0

Name	- UCAR Carbon Company, Inc.
Address	- Parma, Ohio
EPA #	- OHD003926748
Ohio Permit #	- 02-18-0104
Closure	- \$ 173,200
Post-Closure	- \$ 0

RECEIVED

JUN 22 1989

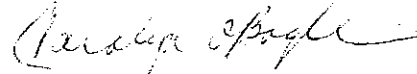
U. S. EPA REGION 5
OFFICE OF REGIONAL ADMINISTRATOR

We previously provided for financial assurance by use of a trust fund for which Chemical Bank acts as Trustee. The Trust Agreement is dated April 30, 1987. As provided in Section 4 of the Trust Agreement, we hereby request that the Director authorize in writing the trustee to refund to UCC (the Grantor) the total amount in the trust fund for the State of Ohio. This authorization letter should be addressed to:

Mr. Gregory K. McFarlane
Senior Trust Officer
Chemical Bank
Corporate Trust Dept.
55 Water Street, Suite 1820
New York, NY 10041

Kindly send me a copy of your letter of authorization to Chemical Bank. Your assistance in expediting release of the funds in accordance with the time limitations set forth in the applicable regulations would be appreciated. Please contact me at 203-794-7252 if I can be of assistance.

Very truly yours,



C. A. O'Boyle

CAO'B:RT
0050T/11

cc: G. K. McFarlane, Senior Trust Officer
Chemical Bank

Regional Administrator ✓
U.S. Environmental Protection Agency
Region V
230 South Dearborn Street
Chicago, IL 60604

UNION CARBIDE CORPORATION

39 OLD RIDGEBURY ROAD
DANBURY, CT 06817-0001

RECEIVED
MAY 31 1989
U.S. EPA, REGION V
WASTE MANAGEMENT DIVISION
OFFICE OF THE DIRECTOR

J. CLAYTON STEPHENSON
VICE CHAIRMAN

O: WMD-
CC: RF
C.M. 613689351

May 16, 1989

CERTIFIED MAIL

Regional Administrator
U.S. Environmental Protection Agency
Region V
230 South Dearborn Street
Chicago, IL 60604

Re: Demonstration of Financial Assurance
for Closure and/or Post-Closure Care

Dear Sir or Madam:

I am the chief financial officer of Union Carbide Corporation, 39 Old Ridgebury Road, Danbury, CT 06817-0001. This letter is in support of the firm's establishment of state-required financial mechanisms for financial assurance for closure and/or post-closure care.

Evidence of establishment of the mechanism for the facilities listed below is enclosed herein:

Name	- UCAR Carbon Company, Inc.
Address	- Lakewood, Ohio
EPA #	- OH0004167383
Ohio Permit #	- 02-18-0132
Closure	- \$ 191,000
Post-Closure	- \$ 0

Name	- UCAR Carbon Company, Inc.
Address	- Parma, Ohio
EPA #	- OHD003926748
Ohio Permit #	- 02-18-0104
Closure	- \$ 173,200
Post-Closure	- \$ 0

RECEIVED
MAY 30 1989
U. S. EPA REGION 5
OFFICE OF REGIONAL ADMINISTRATOR

Name - L-Tec Company
Address - Ashtabula, Ohio
EPA # - OH0000821454
Ohio Permit # - 02-04-0404
Closure - \$ 500,000
Post-Closure - \$ 550,000

Pursuant to the requirements of 40 CFR Parts 264.149(a) and 265.149(a), this firm requests that the state-required mechanism be considered acceptable for meeting the requirements of Subpart H of 40 CFR Part 264 and 265.

Very truly yours,

J. C. Stephenson

J. Clayton Stephenson
Vice Chairman,
Chief Financial and
Administrative Officer

0735R

cc: Director

Ohio Environmental Protection Agency
RCRA Enforcement Section
Division of Solid & Hazardous Waste Management
P. O. Box 1049
1800 Water Mark Drive
Columbus, OH 43266-0419

RF
10/13

UNION CARBIDE CORPORATION

39 OLD RIDGEBURY ROAD

DANBURY, CT 06817-0001

J. CLAYTON STEPHENSON

VICE CHAIRMAN

CERTIFIED MAIL

May 16, 1989

SUPERFUND PROGRAM
MANAGEMENT BRANCHRECEIVED
JUN 02 1989

Director
Ohio Environmental Protection Agency
RCRA Enforcement Section
Division of Solid & Hazardous Waste Management
P. O. Box 1049
1800 Water Mark Drive
Columbus, OH 43266-0149

Regional Administrator
U.S. Environmental Protection Agency
Region V
230 South Dearborn Street
Chicago, IL 60604

Gentlemen:

I am the chief financial officer of Union Carbide Corporation, 39 Old Ridgebury Road, Danbury, Connecticut 06817. This letter is in support of this firm's use of the financial test to demonstrate financial assurance, as specified in Chapters 3745-55 and 3745-66 of the Administrative Code.

1. This firm is the owner or operator of the following facilities for which financial assurance for closure or post-closure care is demonstrated through the financial test specified in Chapters 3745-55 and 3745-66 of the Administrative Code. The current closure and/or post-closure cost estimates covered by the test are shown for each facility:

- None -

- 1a. The firm is the former owner or operator of the following facilities for which financial assurance for closure or post-closure care is demonstrated through the financial test specified in chapters 3745-55 and 3745-66 of the Administrative Code. The current closure and/or post-closure cost estimates covered by the test are shown for each facility:

Name - L-Tec Company
Address - Ashtabula, Ohio
EPA # - OH0000821454
Ohio Permit # - 02-04-0404
Closure - \$ 500,000
Post-Closure - \$ 550,000

2. This firm guarantees, through the corporate guarantee specified in Chapters 3745-55 and 3745-66 of the Administrative Code, the closure or post-closure care of the following facilities owned or operated by subsidiaries of this firm. The current cost estimates for the closure or post-closure care so guaranteed are shown for each facility:

Name - UCAR Carbon Company, Inc.
Address - Lakewood, Ohio
EPA # - OH0004167383
Ohio Permit # - 02-18-0132
Closure - \$ 191,000
Post-Closure - \$ 0

Name - UCAR Carbon Company Inc.
Address - Parma, Ohio
EPA # - OHD003926748
Ohio Permit # - 02-18-0104
Closure - \$ 173,200
Post-Closure - \$ 0

3. In States where U.S. EPA or a State so authorized is administering the financial requirements of Subpart H of 40 C.F.R. Parts 264 and 265, this firm, as owner or operator or guarantor, is demonstrating financial assurance for the closure or post-closure care of the following facilities through the use of a test equivalent or substantially equivalent to the financial test specified in Chapter 3745-55 and 3745-66 of the Administrative Code. The current closure and/or post-closure cost estimates covered by such a test are shown for each facility:

Name - Union Carbide Caribe, Inc.
Address - Ponce, Puerto Rico
EPA # - PRD980594618
Closure - \$8,566,000
Post-Closure - \$7,950,000

Name - Union Carbide Corporation
Address - Hahnville, Louisiana
EPA # - LAD041581422
Closure - \$ 697,232
Post-Closure - \$ 529,800

Name - Union Carbide Industrial Gases, Inc.
 Address - Tonawanda, NY
 EPA # - NYD002123792
 Closure - \$ 100,000
 Post-Closure - \$ 0

Name - Union Carbide Corporation
 Specialty Chemicals Division
 Address - So. Charleston, WV
 EPA # - WVD005005483
 WVD980554885
 Closure - \$7,608,630
 Post-Closure - \$1,995,714

Name - Union Carbide Corporation
 Address - Woodbine, Georgia
 EPA # - GAD981235294
 Closure - \$0
 Post-Closure - \$2,475,000

Name - Union Carbide Corporation
 Specialty Chemicals Division
 Address - Sistersville, WV
 EPA # - WVD004325353
 Closure - \$2,692,889
 Post-Closure - \$1,601,656

Name - Union Carbide Corporation
 Specialty Chemicals Division
 Address - Nitro, WV
 EPA # - WVD000739722
 Closure - \$ 0
 Post-Closure - \$ 994,560

Name - Union Carbide Corporation
 Engineering, Manufacturing and Technology
 Services (Technical Center)
 Address - So. Charleston, WV
 EPA # - WVD060682291
 Closure - \$ 85,326
 Post-Closure - \$ 0

Name - Union Carbide Corporation
 Polyolefins Division
 Address - Port Lavaca, Texas
 EPA # - TXD041515420
 Closure - \$2,890,500
 Post-Closure - \$2,750,700
 Corrective
 Action - \$3,840,000

Name - Union Carbide Corporation
Solvents & Coating Materials Division
Address - Brownsville, Texas
EPA # - TXD008114092
Closure - \$1,429,680
Post-Closure - \$ 560,476

Name - Union Carbide Corporation
Solvents & Coating Materials Division
Address - Texas City, Texas
EPA # - TXD000461533
- TXD980626782
Closure - \$432,123
Post-Closure - \$647,070

- 3a. In States where U.S. EPA or a State so authorized is administering the financial requirements of Subpart H of 40 C.F.R. Parts 264 and 265, this firm, as former owner or operator, is demonstrating financial assurance for the closure or post-closure care of the following facilities through use of a test equivalent or substantially equivalent to the financial test specified in Chapter 3745-55 and 3745-66 of the Administrative Code. The current closure and/or post closure cost estimates covered by such a test are shown for each facility:

Name - L-Tec Company
Address - Florence, South Carolina
EPA # - SCD005574967
Closure - \$ 475,000
Post-Closure - \$1,100,000

4. This firm is the owner or operator of the following hazardous waste management facilities for which financial assurance for closure or, if a disposal facility, post-closure care is not demonstrated to Ohio EPA through the financial test or any other financial assurance mechanism specified in Chapters 3745-55 and 3745-66 of the Administrative Code or equivalent or substantially equivalent State mechanisms. The current closure and/or post-closure cost estimates not covered by such financial assurance are shown for each facility:

- None -

This firm is required to file a form 10K with the Securities and Exchange Commission (SEC) for the latest fiscal year.

The fiscal year of this firm ends on December 31. The figures for the following items marked with an asterisk are derived from this firm's independently audited, year-end financial statements for the latest completed fiscal year, ended December 31, 1988.

ALTERNATIVE II

	<u>(MM \$)</u>
1. Sum of current closure and post-closure cost estimates. (Total of all cost estimates shown in the four paragraphs above.)	\$50.8
2. Current bond rating of most recent issuance of this firm and name of rating services.	Baa2-Moody's Investor Services, Inc.
3. Date of issuance of bond.	1/16/86
4. Date of maturity of bond.	Senior Notes due 1993; Senior Notes due 1996; Senior Debentures due 2006.
*5. Tangible net worth (including closure and post-closure cost estimates included in "total liabilities" on balance sheet.	\$1,788
*6. Total assets in U.S. (required only if less than 90% of firm's assets are located in the U.S.)	\$5,748
	<div style="display: flex; justify-content: space-around;"> <div><u>YES</u></div> <div><u>NO</u></div> </div>
7. Is line 5 at least \$10 million?	X
8. Is line 5 at least 6 times line 1?	X
*9. Are at least 90% of firm's assets located in the U.S.? If not, complete line 10.	X
10. Is line 6 at least 6 times line 1?	X

I hereby certify that, with the exceptions of paragraphs 1a and 3a, the wording of this letter is identical to the wording specified in paragraph (F) of rule 3745-55-51 of the Administrative Code as such regulations were constituted on the date shown immediately below.

May 16, 1989

Very truly yours,



J. Clayton Stephenson
Vice Chairman,
Chief Financial and
Administrative Officer

0676R

RF
CAP

KPMG Peat Marwick

Certified Public Accountants

Peat Marwick Main & Co.

One Plaza West
100 Mill Plain Road
Danbury, CT 06811

Telephone 203 743 6391

Telecopier 203 798 6870

The Board of Directors
Union Carbide Corporation:

We have audited, in accordance with generally accepted auditing standards, the consolidated balance sheet of Union Carbide Corporation and subsidiaries as of December 31, 1988 and the related consolidated statements of income, stockholders' equity and cash flows for the year then ended, and have issued our report thereon dated February 21, 1989.

In accordance with Subpart H of Title 40 CFR Parts 264 and 265 of the Code of Federal Regulations, we compared the data in Items 5, 6 and 9 of the letter from the Corporation's Chief Financial and Administrative Officer dated May 16, 1989 in support of the Corporation's use of the financial test to demonstrate financial assurance, as specified in such regulations, with the audited financial statements.

In connection with the procedures referred to in the paragraph above, no matters came to our attention that caused us to believe that the specified data should be adjusted.

We understand that this report is intended solely to assist you in evaluating the Corporation's adherence to the requirements of Subpart H of Title 40 CFR Parts 264 and 265 of the Code of Federal Regulations and should not be used for any other purpose.

Peat Marwick Main & Co.

May 12, 1989

UNION CARBIDE CORPORATION

39 OLD RIDGEBURY ROAD

DANBURY, CT 06817-0001

J. CLAYTON STEPHENSON

VICE CHAIRMAN

CORPORATE GUARANTEE FOR CLOSURE

AND

POST-CLOSURE CARE (OHIO)

Guarantee made this May 16, 1989 by Union Carbide Corporation, a business corporation organized under the laws of the State of New York, herein referred to as guarantor, to the Ohio Environmental Protection Agency, obligee, on behalf of our subsidiary UCAR Carbon Company Inc., of Lakewood, Ohio and Parma, Ohio.

Recitals

1. Guarantor meets or exceeds the financial test criteria and agrees to comply with the reporting requirements for guarantors as specified in Paragraph (F) of rules 3745-55-43 and 3745-55-45 of the Administrative Code or Paragraph (E) of rules 3745-66-43 and 3745-66-45 of the Administrative Code.

2. UCAR Carbon Company Inc., owns or operates the following hazardous waste management facilities covered by this guarantee:

Name	- UCAR Carbon Company Inc.
Address	- Lakewood, Ohio
EPA #	- OH0004167383
Ohio Permit #	- 02-18-0132
Closure	- \$ 191,000
Post-Closure	- \$ 0

Name	- UCAR Carbon Company Inc.
Address	- Parma, Ohio
EPA #	- OHD003926748
Ohio Permit #	- 02-18-0104
Closure	- \$ 173,200
Post-Closure	- \$ 0

3. "Closure plans" and "post-closure plans" as used below refer to the plans maintained as required by Chapters 3745-55 and 3745-66 of the Administrative Code for the closure and post closure care of facilities as identified above.

4. For value received from UCAR Carbon Company Inc., guarantor guarantees to Ohio EPA that in the event that UCAR Carbon Company Inc. fails to perform "closure and post-closure care" of the above facilities in accordance with the closure or post-closure plans and other permit or interim status requirements whenever required to do so, the guarantor shall do so or establish a trust fund as specified in Chapters 3745-55 and 3745-66 of the Administrative Code as applicable, in the name of UCAR Carbon Company Inc. in the amount of the current closure or post-closure cost estimates as specified in Chapters 3745-55 and 3745-66 of the Administrative Code.
5. Guarantor agrees that if, at the end of any fiscal year before termination of this guarantee, the guarantor fails to meet the financial test criteria, guarantor shall send within 90 days, by certified mail, notice to the Director, Ohio EPA and to UCAR Carbon Company Inc. that he intends to provide alternate financial assurance as specified in Chapters 3745-55 and 3745-66 of the Administrative Code as applicable, in the name of UCAR Carbon Company Inc. Within 120 days after the end of such fiscal year, the guarantor shall establish such financial assurance unless UCAR Carbon Company Inc. has done so.
6. The guarantor agrees to notify the Director by certified mail, of a voluntary or involuntary proceeding under Title 11 (Bankruptcy), U.S. Code, naming guarantor as debtor, within 10 days after commencement of the proceedings.
7. Guarantor agrees that within 30 days after notified by the Director of a determination that guarantor no longer meets the financial test criteria or that he is disallowed from continuing as a guarantor of closure or post-closure care, he shall establish alternate financial assurance as specified in Chapters 3745-55 or 3745-66 of the Administrative Code as applicable, in the name of UCAR Carbon Company Inc. or unless UCAR Carbon Company Inc. has done so.
8. Guarantor agrees to remain bound under this guarantee notwithstanding any or all of the following: amendment or modification of the closure or post-closure plan, amendment or modification of the permit, the extension or reduction of the time of performance of closure or post-closure, or any other modification or alteration of an obligation of the owner or operator pursuant to Chapters 3745-55 or 3745-66 of the Administrative Code.
9. Guarantor agrees to remain bound under the guarantee for so long as UCAR Carbon Company Inc. must comply with the applicable financial assurance requirements of Chapters 3745-55 or 3745-66 of the Administrative Code for the above-listed facilities, except that guarantor may cancel this guarantee by sending

notice by certified mail to the Director and to UCAR Carbon Company Inc. such cancellation to become effective no earlier than 120 days after receipt of such notice by both Ohio EPA and UCAR Carbon Company Inc. as evidenced by the return receipts.

10. Guarantor agrees that if UCAR Carbon Company Inc. fails to provide alternate financial assurance as specified in Chapters 3745-55 or 3745-66 of the Administrative Code as applicable, and obtain written approval of such assurance from the Director within 90 days after a notice of cancellation by the guarantor is received by the Director from guarantor, guarantor shall provide such alternate financial assurance in the name of UCAR Carbon Company Inc.
11. Guarantor expressly waives notice of acceptance of this guarantee by the Ohio EPA or by UCAR Carbon Company Inc. Guarantor also expressly waives notice of amendments or modifications of the closure and/or post-closure plan and of amendments or modifications of the facility permits.

I hereby certify that the wording of this guarantee is identical to the wording specified in Paragraph (H) of rule 3745-55-51 of the Administrative Code as such regulations were constituted on the date first above written.

Effective Date:

(Name of Guarantor):

(Authorized signature for guarantor):

(Name of person signing):

(Title of person signing):

May 16, 1989

UNION CARBIDE CORP.

J. E. Stephenson
J. Clayton Stephenson
Vice Chairman,
Chief Financial and
Administrative Officer

Signature of witness or notary:

Diane E. Bickland

DIANE E. BICKLAND
NOTARY PUBLIC
MY COMMISSION EXPIRES MARCH 31, 1991

RF
JP

0708R

KPMG Peat Marwick

Certified Public Accountants

Peat Marwick Main & Co.

One Plaza West
100 Mill Plain Road
Danbury, CT 06811

Telephone 203 743 6391

Telecopier 203 798 6870

The Board of Directors
Union Carbide Corporation:

We have audited, in accordance with generally accepted auditing standards, the consolidated balance sheet of Union Carbide Corporation and subsidiaries as of December 31, 1988 and the related consolidated statements of income, stockholders' equity and cash flows for the year then ended, and have issued our report thereon dated February 21, 1989.

In accordance with Subpart H of Title 40 CFR Parts 264 and 265 of the Code of Federal Regulations, we compared the data in Items 5, 6 and 9 of the letter from the Corporation's Chief Financial and Administrative Officer dated May 16, 1989 in support of the Corporation's use of the financial test to demonstrate financial assurance, as specified in such regulations, with the audited financial statements.

In connection with the procedures referred to in the paragraph above, no matters came to our attention that caused us to believe that the specified data should be adjusted.

We understand that this report is intended solely to assist you in evaluating the Corporation's adherence to the requirements of Subpart H of Title 40 CFR Parts 264 and 265 of the Code of Federal Regulations and should not be used for any other purpose.

Peat Marwick Main & Co.

May 12, 1989

FINANCIAL INDEX

Management's Discussion and Analysis

Results of Operations 26

Liquidity, Capital Resources

and Other Financial Data 29

Segment Data 31

Notes to Segment Data 32

Quarterly Data 33

Selected Financial Data 34

Statement of Income 35

Balance Sheet 36

Statement of Cash Flows 37

Statement of Stockholders' Equity 38

Notes to Financial Statements 39

Management's Statement

of Responsibility 60

Independent Auditors' Report 60

the U.S. dollar. Partially offsetting these increases were increased selling, administrative and other expenses, primarily related to increased customer service and support. Selling, administrative and other expenses declined as a percent of sales.

Segment sales in 1986 remained about the same as in 1985. Lower domestic sales reflected an average 5% decline in selling prices across all major businesses. The price decline reflected lower hydrocarbon feedstock costs, which moved lower with oil prices. International sales increased moderately.

Operating profit in 1986 was \$446 million, compared to a \$316 million operating loss in 1985. The 1985 operating loss included \$553 million of unusual charges. Excluding unusual charges, operating profit rose 88% in 1986. Decreases in domestic raw material and energy costs more than offset the decline in product prices. In addition, during 1985 we shut down and wrote off surplus and high-cost capacity and implemented an early retirement program, which reduced 1986 plant operating costs, overhead costs and depreciation. Operating profit in 1986 included \$10 million from the sale of a distribution terminal in New Jersey.

Dollar amounts in millions	1988	1987	1986
Sales	\$ 5,525	\$ 4,325	\$ 3,730
% of UCC consolidated	66%	63%	59%
Operating profit	\$ 1,218	\$ 545	\$ 446
% of UCC consolidated	76%	61%	56%
Number of employees (year-end)	16,362	17,108	16,759
Employment costs (Wages, benefits, payroll taxes)	\$ 767	\$ 744	\$ 688

SEGMENT ANALYSIS: INDUSTRIAL GASES

Industrial Gases sales in 1988 were 12% greater than in 1987 and continued the upward trend of the past two years. The current year's increase was a result of increased sales in all geographic areas. Although domestic selling prices weakened in 1988, we had a banner year in terms of sales volume. Oxygen demand has revived as a result of increased demand from the steel industry, and nitrogen demand has benefited from the general strength in the U.S. economy. Sales have also received a boost from acquisitions of industrial gases distributors and by serving customers in a wider range of industries. Latin America, where sales rose 22% over 1987, accounts for the largest share of the segment's international sales. Double-digit sales gains were also recorded for all of our other international areas.

Operating profit in 1988 was \$324 million. Excluding a \$10 million charge in 1988 for impairment of assets related to an enhanced oil recovery project, operating profit in 1988 increased 2% to \$334 million. Although domestic operating results were lower, significant increases in operating profits in both Latin America and Canada boosted worldwide profits to the higher level. The gross margin ratio for the segment was level with the prior year, and selling, administrative and other

expenses as a percent of sales increased slightly. Other income-net was lower due to restructuring costs in the domestic packaged gases business.

Industrial Gases sales in 1987 expanded 6% over 1986, a result of higher sales in all international areas. Sales rose 26% in Latin America. Although domestic sales volume increased, total domestic sales declined due to price pressure in highly competitive markets.

Operating profit in 1987 was \$327 million, an increase of 11% over 1986. Positive international results were aided by improved operations and currency translation effects, particularly in Latin America. Domestic operating profit declined, again due primarily to pricing pressures.

Adjusted for the 1985 divestiture of the welding and cutting systems business, segment sales in 1986 increased 5% over 1985. Domestic sales were virtually unchanged, and international sales increased as a result of the strong demand in Latin America and Europe and the favorable effect of the lower U.S. dollar, especially in Europe.

Operating profit in 1986 was \$294 million, compared to \$228 million in 1985. The 1985 operating profit included unusual charges of \$76 million and a gain on the divestiture of the welding and cutting systems business of \$37 million. When compared with the prior year, before unusual charges and the non-recurring gain, segment operating profit in 1986 increased 10%, principally due to improved domestic operations that benefited from lower overhead costs.

Dollar amounts in millions	1988	1987	1986
Sales	\$ 2,076	\$ 1,852	\$ 1,741
% of UCC consolidated	25%	27%	27%
Operating profit	\$ 324	\$ 327	\$ 294
% of UCC consolidated	20%	36%	37%
Number of employees (year-end)	20,100	19,032	19,232
Employment costs (Wages, benefits, payroll taxes)	\$ 526	\$ 492	\$ 460

SEGMENT ANALYSIS: CARBON PRODUCTS

Increased demand for products in all of the segment's businesses drove sales higher in the current year by 13% over 1987 to the highest level of the last three years. Increased shipments were recorded in all major geographic areas, although sales to Eastern Europe were held back by customers' lack of hard currencies. Sales were also helped by the effect of the weaker U.S. dollar on currency trans-

he benefits arising from the Recapitalization Plan (see Note 4 on page 41). Interest expense almost doubled in 1986 versus the prior year mainly as a result of the interest incurred on debt securities issued to stockholders as a result of an Exchange Offer for common stock (see Note 3 on page 40).

PROVISION FOR INCOME TAXES AND STATEMENT OF FINANCIAL ACCOUNTING STANDARDS NO. 96, ACCOUNTING FOR INCOME TAXES (SFAS 96)

The effective tax rate for 1988 was 38.9%, which was higher than the 34.0% rate reported in 1987. The rate increase reflects the reversal of certain deferred income tax benefits established in prior years at higher tax rates, higher 1988 U.S. state and local taxes based on income, elimination of business tax credits and the impact of untaxed currency translation losses. The 1987 rate of 34.0% was lowered by adjustments related to 1986 sales of businesses and was higher than the 30.2% rate reported in 1986, mainly due to increased U.S. earnings taxed at the statutory rate and the reduction of business and research and experimentation tax credits.

SFAS 96 which, as issued, was to be effective for years beginning after December 15, 1988, significantly changes the accounting for income taxes. The new standard requires an asset and liability approach for financial accounting and reporting of income taxes. In December 1988, the Financial Accounting Standards Board (FASB) delayed the initial required adoption of SFAS 96 to fiscal years beginning after December 15, 1989. The delay will allow the FASB more time to consider implementation questions and provide additional time for preparers of financial statements to study this complex accounting standard. The Corporation plans to adopt SFAS 96 in 1990 (see Note 10 on page 42).

MINORITY INTEREST INCREASES IN 1988

Minority stockholders' share of income increased 60% in 1988 to \$64 million. A full year of dividends on preferred stock of Union Carbide Finance Corporation (see Note 7 on page 41) was included in minority share in 1988 compared with dividends for a partial year in 1987 (operations commenced in September 1987). Minority share also increased in 1988 as a result of higher income from operations of subsidiaries in Canada and Brazil. Minority share increased 25% in 1987 to \$40 million. Higher income from operations of subsidiaries in Brazil and dividends on preferred stock of Union Carbide Finance Corporation accounted for much of the increase. Minority share increased 45% in 1986, to \$32 million. Excluding the \$15 million impact of the 1985 unusual charges (resulting from a restructuring program), minority interest was 14% below that of 1985 due mainly to decreased results in Brazil.

INCOME FROM EQUITY COMPANIES MORE THAN DOUBLES

The Corporation's share of income of companies carried at equity in 1988 was \$37 million, well over twice our share of income in 1987. Substantially improved results from corporate joint ventures in

our core business groups in Mexico, Japan and Spain as well as excellent performance from KEMET Electronics Corporation, all contributed to this increase. The Corporation's share of income of companies carried at equity in 1987 was \$14 million, the same as in 1986. Improved earnings of Canadian affiliates and income from KEMET Electronics Corporation were offset by increased losses of an affiliate in Mexico. The amount earned in 1986 was down sharply from the \$27 million reported in 1985, mainly due to losses of an affiliate in Mexico.

LIQUIDITY, CAPITAL RESOURCES AND OTHER FINANCIAL DATA

CASH FLOW FROM OPERATIONS

Cash flow from operations in 1988 more than doubled from 1987 levels to \$932 million, largely as a result of improved income from operations partially offset by increases in accounts receivable and inventories related to the increased sales activity. As a result of settlement of the Bhopal litigation (see Note 22 on page 49), the Corporation paid \$420 million to the Government of India on February 24, 1989. The payment was funded through proceeds from drawdowns of existing standby credit facilities. It is anticipated that these borrowings will be reduced during 1989 by application of insurance proceeds as well as internally generated funds. On the same date and pursuant to the settlement, Union Carbide India Ltd., a non-consolidated subsidiary, paid the Government of India the rupee equivalent of \$45 million.

CASH FLOW USED FOR INVESTING

Cash flow used for investing includes capital expenditures and investments, offset by proceeds from the sale of assets and businesses. Net expenditures associated with investing activities increased to \$531 million from \$270 million in 1987, as a result of increased capital expenditures and the absence of proceeds from disposals and partial disposals of businesses.

Capital expenditures in 1988 totaled \$671 million, a 34% increase over 1987. Expenditures in 1987 and 1986 were \$502 million and \$524 million, respectively. Of these expenditures, approximately 45% were directed to new capacity, 40% to cost reduction and replacement, and 15% to environmental, safety and health facilities.

Approximately 70% of capital spending for the last three years was in the United States and Puerto Rico. The two projects that accounted for the largest capital expenditures during 1988 involved the reactivation of an olefins unit at Taft, La. and an upgrade of our vinyl acetate unit at Texas City, Tex.

SEGMENT DATA

INDUSTRY SEGMENTS (Millions of dollars)

Sales	1988	1987	1986
Chemicals & Plastics	\$5,525	\$4,325	\$3,730
Industrial Gases	2,076	1,852	1,741
Carbon Products	723	638	609
Other	—	99	263
Total UCC Consolidated	\$8,324	\$6,914	\$6,343
Identifiable Assets	1988	1987	1986
Chemicals & Plastics	\$4,372	\$3,884	\$3,897
Industrial Gases	2,525	2,335	2,045
Carbon Products	863	817	749
Other	51	117	102
Total UCC Consolidated	\$7,811	\$7,153	\$6,793
Depreciation	1988	1987	1986
Chemicals & Plastics	\$ 247	\$ 256	\$ 243
Industrial Gases	178	164	154
Carbon Products	43	41	39
Other	5	2	17
Total UCC Consolidated	\$ 473	\$ 463	\$ 453
Operating Profit	1988	1987	1986
Chemicals & Plastics	\$1,218	\$ 545	\$ 446
Industrial Gases	324	327	294
Carbon Products	64	37	53
Other	—	(14)	(2)
Total UCC Consolidated	\$1,606	\$ 895	\$ 791
Capital Expenditures	1988	1987	1986
Chemicals & Plastics	\$ 372	\$ 190	\$ 225
Industrial Gases	247	272	231
Carbon Products	44	37	45
Other	8	3	23
Total UCC Consolidated	\$ 671	\$ 502	\$ 624

GEOGRAPHIC SEGMENTS (Millions of dollars)

Sales	1988	1987	1986
United States & Puerto Rico	\$5,758	\$4,778	\$4,555
Canada	429	298	241
Europe	929	876	747
Latin America	777	638	519
Far East & Other	431	324	281
International Operations	2,566	2,136	1,788
Total UCC Consolidated	\$8,324	\$6,914	\$6,343
Identifiable Assets	1988	1987	1986
United States & Puerto Rico	\$5,326	\$4,820	\$4,835
Canada	835	641	628
Europe	1,206	1,191	879
Latin America	821	748	758
Far East & Other	252	295	251
International Operations	3,114	2,875	2,516
Inter-segment eliminations	(629)	(542)	(558)
Total UCC Consolidated	\$7,811	\$7,153	\$6,793
Operating Profit	1988	1987	1986
United States & Puerto Rico	\$1,180	\$ 600	\$ 599
Canada	112	50	47
Europe	60	40	42
Latin America	241	179	98
Far East & Other	21	22	8
International Operations	434	291	195
Inter-segment eliminations	(8)	4	(3)
Total UCC Consolidated	\$1,606	\$ 895	\$ 791

QUARTERLY DATA

Millions of dollars	1Q	2Q	3Q	4Q	Year
1988					
Net sales	\$ 1,947	\$ 2,130	\$ 2,108	\$ 2,139	\$ 8,324
Cost of sales	1,301	1,397	1,383	1,384	5,465
Depreciation	117	119	114	123	473
Net income	101	187	213	161 ^a	662
1987					
Net sales	\$ 1,681	\$ 1,658	\$ 1,730	\$ 1,845	\$ 6,914
Cost of sales	1,150	1,126	1,195	1,302	4,773
Depreciation	118	115	117	113	463
Net income	66	69	74	23 ^b	232

Dollars per share	1Q	2Q	3Q	4Q	Year
1988					
Primary net income per share	\$ 0.75	\$ 1.39	\$ 1.56	\$ 1.17 ^a	\$ 4.88
Fully diluted net income per share	0.73	1.33	1.49	1.12 ^a	4.66
Dividends	0.375	0.375	0.20	0.20	1.15
Market price (high) ^c	25.63	25.13	25.50	28.38	28.38
Market price (low) ^c	19.88	17.00	20.88	23.25	17.00
1987					
Primary net income per share	\$ 0.51	\$ 0.52	\$ 0.57	\$ 0.17 ^b	\$ 1.76
Fully diluted net income per share	0.51	0.51	0.55	0.17 ^b	1.75
Dividends	0.375	0.375	0.375	0.375	1.50
Market price (high) ^c	30.13	32.50	31.38	32.13	32.50
Market price (low) ^c	22.63	26.75	26.75	15.50	15.50

^aIncludes an after-tax charge of \$58 million, or \$0.43 per share primary, (\$0.40 per share fully diluted) associated with the settlement of Bhopal litigation (see Note 22 on page 49).

^bIncludes a charge of \$53 million, or \$0.40 per share, from special litigation costs.

^cPrices are based on New York Stock Exchange composite transactions.

CONSOLIDATED STATEMENT OF INCOME

Union Carbide Corporation and Subsidiaries

Millions of dollars (except per share figures), year ended December 31,	1988	1987	1986
NET SALES	\$ 8,324	\$ 6,914	\$ 6,343
Deductions (additions)			
Cost of sales, exclusive of depreciation shown separately below	5,465	4,773	4,343
Research and development	159	159	148
Selling, administrative, and other expenses	822	779	740
Depreciation	473	463	453
Interest on long-term and short-term debt	401	383	543
Other income—net	(124)	(34)	(96)
INCOME OF CONSOLIDATED COMPANIES BEFORE PROVISION FOR INCOME TAXES — CONTINUING OPERATIONS	1,128	391	212
Provision for income taxes	439	133	64
INCOME OF CONSOLIDATED COMPANIES — CONTINUING OPERATIONS	689	258	148
Less: Minority stockholders' share of income	64	40	32
Plus: UCC share of income of companies carried at equity	37	14	14
INCOME FROM CONTINUING OPERATIONS	662	232	130
Income from discontinued operations, net of income taxes and minority interest	—	—	5
	662	232	135
Gain on disposals, net of income taxes and minority interest	—	—	564
INCOME BEFORE EXTRAORDINARY CHARGE AND CUMULATIVE EFFECT OF CHANGE IN ACCOUNTING PRINCIPLE	662	232	699
Extraordinary charge	—	—	(473)
Cumulative effect of change in accounting principle for reversion of surplus pension funds	—	—	270
NET INCOME	\$ 662	\$ 232	\$ 496
EARNINGS PER SHARE			
PRIMARY			
Income from continuing operations	\$ 4.88	\$ 1.76	\$ 1.25
Income from discontinued operations	—	—	0.05
Gain from disposals of discontinued operations	—	—	5.44
Income before extraordinary charge and cumulative effect of change in accounting principle	4.88	1.76	6.74
Extraordinary charge	—	—	(4.56)
Cumulative effect of change in accounting principle	—	—	2.60
Net income	\$ 4.88	\$ 1.76	\$ 4.78
FULLY DILUTED			
Income from continuing operations	\$ 4.66	\$ 1.75	\$ 1.24
Income from discontinued operations	—	—	0.05
Gain from disposals of discontinued operations	—	—	5.40
Income before extraordinary charge and cumulative effect of change in accounting principle	4.66	1.75	6.69
Extraordinary charge	—	—	(4.53)
Cumulative effect of change in accounting principle	—	—	2.59
Net income	\$ 4.66	\$ 1.75	\$ 4.75
DIVIDENDS DECLARED PER SHARE	\$ 1.15	\$ 1.50	\$ 1.50

The Notes to Financial Statements on pages 39 through 49 should be read in conjunction with this statement.

CONSOLIDATED STATEMENT OF CASH FLOWS

Union Carbide Corporation and Subsidiaries

Increase (Decrease) in Cash and Cash Equivalents

Millions of dollars, year ended December 31,

	1988	1987	1986
OPERATIONS			
Income from continuing operations	\$ 662	\$ 232	\$ 130
Non-cash charges (credits) to net income			
Depreciation	473	463	453
Deferred income taxes	127	(47)	115 ^c
Other non-cash charges (credits)	(33)	26	(2)
Investing credits to net income	(24)	(52)	(21)
Working capital ^a	137 ^d	(284) ^b	81 ^c
Long-term assets and liabilities	(410) ^d	123 ^b	127 ^c
Cash flow from operations	932	461	883
INVESTING			
Capital expenditures	(671)	(502)	(524)
Investments	(79)	(120)	(29)
Redemption/sale of assets	219	167 ^b	97 ^c
Discontinued operations and disposals	—	185	2,820
Cash flow from (used for) investing	(531)	(270)	2,364
FINANCING			
Short-term debt	62	(114)	(437)
Net borrowings-UCC bank credit agreements	(27)	(1,050)	1,125
Other long-term borrowings	530	1,392	1,252
Preferred stock issued by a consolidated subsidiary	—	244	—
Issuance of common stock	108	78	736
Long-term debt reductions	(941)	(579)	(4,067)
Minority transactions and other	(15)	(58)	(9)
Repurchase of common stock	—	—	(781) ^e
Special cash distribution	—	—	(1,053)
Cash dividends	(155)	(195)	(144)
Cash flow from (used for) financing	(438)	(282)	(3,378)
Effect of exchange rate changes on cash and cash equivalents	(18)	(7)	—
Change in cash and cash equivalents	(55)	(98)	(131)
Cash and cash equivalents beginning-of-year	201	299	430
Cash and cash equivalents end-of-year	\$ 146	\$ 201	\$ 299

^a Net change in working capital by component (excluding cash and cash equivalents, deferred income taxes, short-term debt and net assets of discontinued businesses):

	1988	1987	1986
(Increase) decrease in current assets			
Notes and accounts receivable	\$ (215) ^d	\$ (249) ^b	\$ (73) ^c
Inventories	(248) ^d	(132) ^b	85
Prepaid expenses	(1) ^d	(14) ^b	(8) ^c
Increase in payables and accruals	599 ^d	111 ^b	77
Working capital	\$ 137	\$ (284)	\$ 81

^b Exclusive of amounts related to Linde Homecare Medical Systems, Inc. and the electronic capacitor business, which are reported in *Discontinued operations and disposals*.

^c Exclusive of amounts related to the sale of the Danbury Headquarters and Tarrytown properties which are reported in *Discontinued operations and disposals*.

^d Exclusive of amounts related to businesses exchanged for equity positions in two joint ventures.

^e Net of \$2,557 million long-term debt issued under the Exchange Offer.

The Notes to Financial Statements on pages 39 through 49 should be read in conjunction with this statement.

NOTES TO FINANCIAL STATEMENTS

INDEX

The subjects covered by the Notes to Financial Statements are found on the following pages:

Subject	Page
1. Accounting Policies Summary	39
2. Discontinued Operations	40
3. Exchange Offer/Special Cash Distribution	40
4. Recapitalization Plan	41
5. Headquarters Sale/Leaseback	41
6. Transfer of Electronic Capacitor Business	41
7. Union Carbide Finance Corporation	41
8. 1986 Extraordinary Charge	41
9. Segment Information	41
10. Income Taxes	42
11. Other Income—Net	43
12. Supplementary Balance Sheet Detail	43
13. Supplementary Cash Flow Detail	44
14. Companies Carried at Equity	44
15. Interest Costs	44
16. Long-Term Debt	45
17. International Subsidiaries	46
18. UCC Stockholders' Equity	46
19. Leases	46
20. Retirement Programs	47
21. Incentive Plans	48
22. Commitments and Contingencies	49

1. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

PRINCIPLES OF CONSOLIDATION—The consolidated financial statements include the accounts of all significant subsidiaries except Union Carbide India Limited and two subsidiaries in Zimbabwe, which are included in *Other investments and advances*. All significant intercompany transactions have been eliminated in consolidation. Investments in significant companies 20% to 50% owned and partnerships are carried at equity in net assets. In the *Consolidated Statement of Income*, Union Carbide's share of the net income of the 20% to 50% owned companies is reported under the caption "UCC share of income of companies carried at equity" and partnership income is included in *Other income-net*. Other investments are carried generally at cost or less.

FOREIGN CURRENCY TRANSLATION—Except for Latin America, unrealized gains and losses resulting from translating foreign subsidiaries' assets and liabilities into U.S. dollars are accumulated in an equity account on the balance sheet until such time as the subsidiary is sold or substantially or completely liquidated. Translation gains and losses relating to operations of subsidiaries in Latin America, where hyperinflation exists, are included in the income statement.

CONSOLIDATED STATEMENT OF CASH FLOWS—In the fourth quarter of 1988, the Corporation adopted Statement of Financial Accounting Standards No. 95, Statement of Cash Flows (SFAS 95) which requires a statement of cash flows in place of a statement of changes in financial position. Pre-

viously reported statements of changes in financial position for 1987 and 1986 have been restated to conform with the 1988 presentation.

CASH EQUIVALENTS—The Corporation considers cash equivalents to be all highly liquid investments that are readily convertible to known amounts of cash and so near their maturity that they present insignificant risk of changes in value because of changes in interest rates.

INVENTORIES—Inventories are stated at cost or market, whichever is lower. These amounts do not include depreciation, the impact of which is not significant to the financial statements. Cost is determined generally on the "last-in, first-out" (LIFO) method for North American companies. The "average cost" method is used by most other subsidiaries.

Approximately 53% of inventory amounts before application of the LIFO method at December 31, 1988 (56% at December 31, 1987), has been valued on the LIFO basis. It is estimated that if inventories had been valued at current costs, they would have been approximately \$445 million and \$382 million higher than reported at December 31, 1988, and December 31, 1987, respectively.

Reduction of certain inventory quantities in 1986 (principally domestic chemicals and plastics and carbon products inventories) resulted in a liquidation of LIFO inventory quantities acquired at lower costs prevailing in prior years. This liquidation reduced cost of sales by \$42 million and increased net income by \$22 million.

FIXED ASSETS AND DEPRECIATION—Fixed assets are carried at cost. Expenditures for replacements are capitalized and the replaced items are retired. Gains and losses from the sale of property are included in income.

Depreciation is calculated on a straight-line basis. The Corporation and its subsidiaries generally use accelerated depreciation methods for tax purposes where appropriate.

PATENTS, TRADEMARKS, AND GOODWILL—Amounts paid for purchased patents and newly acquired subsidiaries in excess of the fair value of the net assets of such subsidiaries have been charged to patents, trademarks, and goodwill. The portion of such amounts determined to be attributable to patents is amortized over their remaining lives, while trademarks and goodwill are amortized over the estimated period of benefit, generally five to forty years.

RESEARCH AND DEVELOPMENT—Research and development costs are charged to expense as incurred. Depreciation expense applicable to research and development facilities and equipment is included in *Depreciation* in the income statement (\$13 million in 1988 and 1987 and \$11 million in 1986).

class have agreed to the entry of a judgment relinquishing all claims the class members may have against the Corporation, the directors and officers who are also named as defendants and Morgan Stanley & Co. Incorporated, as a result of the sale of the consumer products businesses and the distribution of the proceeds. In addition, all future obligations to class members under the rights will be terminated.

4. RECAPITALIZATION PLAN

During 1987, the Corporation completed a recapitalization plan (the "Recapitalization Plan") begun in November 1986, which reduced the Corporation's debt and interest expense and increased operating and financial flexibility. The plan involved in part (i) an offer (the "Debt Tender Offer") to purchase for cash all outstanding debt securities issued to shareholders pursuant to the January 1986 Exchange Offer (the "Securities"), (ii) consummation of a bank credit agreement (the "Bank Credit Agreement") and bridge loan facility to fund Security purchases, and (iii) sales of assets and the public and private sale of long-term debt and equity securities to repay borrowings under the Bank Credit Agreement and the bridge loan facility.

In connection with the Debt Tender Offer, which expired in December 1986, the Corporation repurchased \$2.456 billion, or 96% of the then outstanding Securities, for an aggregate purchase price of \$2.976 billion. In 1986, the Corporation recognized an after-tax extraordinary charge of \$473 million, representing the excess of the purchase price of the Securities over their carrying amount plus estimated related expenses of \$63 million less estimated tax benefits of \$109 million (see Note 8).

Funds required to finance the Securities purchases were provided by borrowings of \$2 billion under the Bank Credit Agreement and \$976 million under a bridge loan facility. Proceeds from sale of the Corporation's agricultural products business (see Note 2), sale/leaseback of the Corporation's Danbury headquarters (see Note 5), sale of common stock (see Note 18) and sale of \$200 million of long-term debt were applied to reduce borrowings under the Bank Credit Agreement and bridge facility to \$1.125 billion and \$125 million, respectively, at December 31, 1986. In 1987, these borrowings were repaid with proceeds from transfer of the Corporation's electronic capacitor business (see Note 6), sale of receivables to Union Carbide Finance Corporation (see Note 7) and sales of long-term debt as well as from internally generated funds.

5. SALE/LEASEBACK OF DANBURY HEADQUARTERS

In December 1986, the Corporation completed the sale of its Danbury headquarters building and 650-acre headquarters site and signed an agreement for

the leaseback of the headquarters building. The sale price was \$340 million, including cash proceeds of \$300 million. A pre-tax gain of \$98 million is being recognized over approximately 20 years, principally as a reduction to rent expense payable pursuant to the leaseback agreement.

6. TRANSFER OF ELECTRONIC CAPACITOR BUSINESS

In April 1987, the Corporation completed the transfer of its electronic capacitor business to KEMET Electronics Corporation, a new corporation formed by the business's management and owned 50% by the Corporation. The Corporation received \$150 million and recognized no gain or loss from the transaction.

7. UNION CARBIDE FINANCE CORPORATION

Union Carbide Finance Corporation ("Finance"), a wholly-owned consolidated subsidiary of the Corporation, purchases trade receivables from the Corporation at a discount on a revolving basis. Finance made its initial purchase of trade receivables in 1987, using proceeds from an offering to the public of \$249 million of asset-backed short-term auction rate cumulative preferred stock, which has been recorded in minority stockholders' equity. The average dividend rate for 1988 was 6.1% (6.0% for 1987).

The Corporation applied a substantial portion of the proceeds from the initial sale of receivables to Finance against borrowings under the Bank Credit Agreement (see Note 4).

8. 1986 EXTRAORDINARY CHARGE

As a result of the premium paid and expenses incurred in connection with the purchase of Securities pursuant to the Debt Tender Offer (see Note 4), 1986 net income included an extraordinary charge of \$473 million (after applicable tax benefits of \$109 million), or \$4.56 primary earnings per share (\$4.53 fully diluted earnings per share).

9. SEGMENT INFORMATION

Audited industry and geographic segment data are presented in Segment Data on page 31.

Union Carbide's businesses and products are described on pages 10 and 11 and on pages 20 through 24.

The following is a summary of the U.S. and Non-U.S. components of *Income of consolidated companies before provision for income taxes—continuing operations*:

Millions of dollars	1988	1987	1986
Income of consolidated companies before provision for income taxes—continuing operations:			
U.S.	\$ 792	\$215	\$ 60
Non-U.S. (includes Puerto Rico)	336	176	152
	\$1,128	\$391	\$212

The Corporation provides for taxes on undistributed earnings of affiliates included in consolidated retained earnings to the extent that such earnings are planned to be remitted and not reinvested indefinitely. Undistributed earnings of affiliates intended to be reinvested indefinitely amounted to \$1.1 billion at December 31, 1988.

11. OTHER INCOME-NET

The following is an analysis of *Other income-net*:

Millions of dollars	1988	1987	1986
Investment income (principally from short-term investments)	\$ 69	\$ 47	\$ 38
Foreign currency adjustments	23	10	5
Special litigation costs ^a	(48)	(65)	—
Sales and disposals of businesses and other assets ^b	33	19	25
Partnership income	96 ^c	15	10
Other ^d	(49)	8	18
	\$ 124	\$ 34	\$ 96

^a Represents accruals to cover reserves for litigation contingencies, including product liability, patents, trade regulation, and the Bhopal settlement (see Note 22).

^b Includes for 1988 a gain of \$20 million from sales of securities by Canadian subsidiaries. Includes for 1986 a gain of \$10 million from the sale of a distribution terminal in New Jersey.

^c Includes \$62 million income from Petromont and Company, Limited, a partnership interest of a Canadian subsidiary.

^d Includes for 1988 a \$13 million charge for impairment of assets related to a Canadian film products business and a \$10 million charge for impairment of assets related to an enhanced oil recovery project. Includes for 1987 a \$14 million write-down of Canadian subsidiaries' investments in securities. Additionally, interest income and other miscellaneous income and expense items are included in the amounts for all years presented.

12. SUPPLEMENTARY BALANCE SHEET DETAIL

Millions of dollars at December 31,	1988	1987
Notes and accounts receivable		
Trade ^a	\$1,241	\$1,110
Other	213	249
	1,454	1,359
Less: Allowance for doubtful accounts	41	65
	\$1,413	\$1,294
Fixed assets		
Land and improvements	\$ 415	\$ 410
Buildings	762	745
Machinery and equipment	7,361	7,119
Construction in progress and other	471	365
	\$9,009	\$8,639
Other assets		
Deferred charges	\$ 172	\$ 160
Long-term receivables	99	104
Patents, trademarks and goodwill	52	72
	\$ 323	\$ 336
Other accrued liabilities		
Accrued accounts payable	\$ 404	\$ 350
Payrolls	111	102
Bhopal settlement accrual	237	—
Other	292	295
	\$1,044	\$ 747
Other long-term obligations		
Accrued pension cost	\$ 41	\$ 124
Bhopal accrual	—	189
Other	314	257
	\$ 355	\$ 570
Deferred credits		
Income taxes ^b	\$ 732	\$ 596
Deferred gain on sales of the Danbury Headquarters and Tarrytown properties	128	140
Other	55	94
	\$ 915	\$ 830
Equity adjustment from foreign currency translation (by geographic area)		
Canada	\$ (27)	\$ (42)
Europe	(62)	(14)
Far East & Other	(17)	(19)
	\$ (106)	\$ (75)

^a Union Carbide sold certain receivables with recourse to various banks for proceeds of \$415 million in 1988, \$801 million in 1987 and \$615 million in 1986. At December 31, 1988, approximately \$65 million remains uncollected (\$71 million in 1987). Of the 1988 amount, \$27 million is included in contingent obligations (\$45 million in 1987). See Note 22.

^b Deferred income taxes related to current items are included in *Prepaid expenses* in the amount of \$172 million in 1988 (\$112 million in 1987).

6. LONG-TERM DEBT

Millions of dollars at December 31,	1988	1987
Union Carbide Corporation		
6.30% Sinking Fund Debentures, with equal annual sinking fund payments to 1997	\$ 112	\$ 125
7.50% Sinking Fund Debentures due 2006, issued at a discount (effective rate 7.55%) with annual sinking fund payments, 1989 to 2005	183	191
7.50% Convertible Subordinated Debentures due 2012, convertible into common stock at \$35.50 per share	345	345
8.50% Sinking Fund Debentures due 2005, with annual sinking fund payments, 1989 to 2004	263	275
8.60% Senior Notes due 1989	95	95
9.10% Senior Notes due 1990	105	105
9.35% Sinking Fund Debentures due 2009, with annual sinking fund payments, 1990 to 2008	200	200
9.35% Senior Notes due 1992	150	150
9.75% Senior Subordinated Notes due 1994	350	350
13.25% Senior Notes due 1993, issued at a discount (effective rate 13.79%)	64	64
14.25% Senior Notes due 1996 issued at a premium (effective rate 13.98%)	19	19
14.50% Notes due 1991, issued at a discount (effective rate 14.69%)	—	150
15.00% Senior Debentures due 2006, issued at a premium (effective rate 14.32%)	17	18
Borrowings under bank credit agreements	39	75
Pollution control and other facility obligations	178	183
Obligations under capital leases	38	41
Other debt	4	5
Domestic subsidiaries		
Borrowings at various maturities and interest rates	14	17
International subsidiaries		
Canadian Dollar loans and obligations due in varying installments through 1993 with interest at 8.38% to 16.00%	160	149
Canadian Dollar sale and leaseback financing due 2017, subject to redemption at holders' option in September 1992	105	96
Borrowings under Electric Furnace Products Company Ltd. Credit Agreement	37	200
Obligations under capital leases	60	43
Other debt-various maturities and interest rates	142	190
	2,680	3,086
Less: Bonds held for sinking fund	193	170
	2,487	2,918
Less: Payments due within one year	192	53
	\$2,295	\$2,863

In the fourth quarter of 1988, the Corporation exercised its call provision and redeemed at par value all \$150 million of the 14.50% Notes due 1991.

The Corporation has bank credit agreements totalling \$850 million, of which \$350 million is committed until December 15, 1990 and \$500 million until October 31, 1990. Under the agreements, options are available to borrow on a revolving basis at various rates. The effective interest rate on borrowings under the agreements in 1988 was approximately 6.64% (7.93% in 1987 and 7.88% in 1986).

Electric Furnace Products Company Limited, a wholly-owned Canadian subsidiary of Union Carbide, has a credit agreement under which \$200 million could have been borrowed through December 1987 and \$154 million could have been borrowed through December 1988, with declining amounts available until January 1994. Under the agreement, options are available to borrow at various rates. This facility is guaranteed by the Corporation. The effective interest rate on borrowings was approximately 8.50% in 1988 (8.58% in 1987).

The above bank credit agreements and the indentures for debt issued in the Exchange Offer (see Note 3) and the Recapitalization Plan (see Note 4) contain various restrictive covenants. These covenants, among other things, restrict the ability of the Corporation and its subsidiaries to merge with another entity, incur or guarantee debt, create liens against assets, make or acquire investments, sell or transfer certain assets, increase dividends above a specified amount or make other distributions beyond certain limits with respect to the Corporation's capital stock, sell shares of a subsidiary's capital stock or issue preferred stock of a subsidiary. Also, the bank credit agreements require the Corporation to maintain certain consolidated financial ratios, including leverage, cash flow, and interest coverage. Events of default include certain changes in the control of the Corporation. In addition, should a material adverse development in any litigation occur, which could materially affect the ability of the Corporation to perform its obligations under the bank credit agreements and certain of the indentures, the Corporation may be required to prepay the indebtedness under such agreements and indentures.

10. RETIREMENT PROGRAMS

The noncontributory defined benefit retirement program of Union Carbide Corporation ("U.S. Retirement Program") covers substantially all U.S. employees and certain employees in other countries. Pension benefits are based primarily on years of service and compensation levels prior to retirement.

Pension coverage for employees of the Corporation's non-U.S. consolidated subsidiaries is provided, to the extent deemed appropriate, through separate plans. Obligations under such plans are systematically provided for by depositing funds with trustees, under insurance policies, or by book reserves.

In 1986, the Corporation adopted SFAS 87 for the U.S. Retirement Program. During 1988, SFAS 87 was adopted for the non-U.S. plans. Prior year pension amounts have not been restated for this change. The effect of adopting SFAS 87 for non-U.S. plans was to reduce 1988 net pension cost by \$9 million.

U.S. Retirement Program net pension cost associated with continuing operations amounted to \$34 million in 1988, \$28 million in 1987 and \$19 million in 1986. Net pension cost for non-U.S. plans in 1988 amounted to \$2 million. Pension costs of non-U.S. plans in 1987 and 1986 amounted to \$14 million and \$15 million, respectively.

The components of continuing operations net pension cost for the U.S. Retirement Program and non-U.S. plans in 1988 and for the U.S. Retirement Program in 1987 and 1986 are as follows:

Millions of dollars	1988	1987	1986
Service cost—benefits earned during the period	\$ 72	\$ 61	\$ 53
Interest cost on projected benefit obligation	170	129	122
Return on plan assets—actual	\$(225)	\$ 20	\$(311)
—unrecognized return	31	(194)	(175)
	(194)	(155)	167
Amortization of net gain	(12)	(7)	(12)
Net pension cost	\$ 36	\$ 28	\$ 19

The funded status of the U.S. Retirement Program and non-U.S. plans in 1988 and the U.S. Retirement Program in 1987 was as follows:

Millions of dollars at December 31,	1988	1987
Actuarial present value of plan benefits:		
Accumulated benefit obligation, including vested benefits of \$1,578 million at December 31, 1988, and \$1,231 million at December 31, 1987	\$(1,636)	\$(1,279)
Projected benefit obligation	\$(2,100)	\$(1,650)
Fair value of plan assets, primarily invested in common stocks and fixed income securities	\$ 2,078	\$ 1,628
Excess of projected benefit obligation over plan assets	\$ (22)	\$ (22)
Unamortized net asset at transition	(187)	(169)
Unamortized prior service cost	52	42
Unrecognized (gains) and losses—net	51	25
Accrued pension cost	\$ (106)	\$ (124)

The actuarial assumptions used were as follows:

	1988	1987
Discount rate for determining projected benefit obligation	9.0%	9.0%
Rate of increase in compensation levels	7.0%	7.0%
Expected long-term rate of return on plan assets	10.0%	10.0%

In connection with the initial application of SFAS 87 and companion requirements, a deferred credit of \$500 million related to the 1985 reversion of surplus pension funds, less applicable taxes of \$230 million, was recognized as a non-recurring credit in the 1986 Consolidated Statement of Income under the caption "Cumulative Effect of Change in Accounting Principle for Reversion of Surplus Pension Funds."

Union Carbide Corporation and certain of its consolidated subsidiaries provide health care and life insurance benefits for eligible retired employees. These benefits are provided through various insurance companies and health care providers. The annual insurance premiums, which are based on the benefits paid during the year, are generally expensed as incurred. Total expenses for 1988 amounted to \$28 million (\$29 million in 1987 and \$26 million in 1986). Substantially all of these expenses related to domestic operations.

22. COMMITMENTS AND CONTINGENCIES

At December 31, 1988, the Corporation and its consolidated subsidiaries had contingent obligations of \$451 million, principally for purchase and sale commitments related to the ordinary conduct of business and guarantees of outstanding loans and notes payable by others. It is not expected that these contingent obligations will have a material adverse effect on the consolidated financial position of the Corporation.

On February 14, 1989, the Supreme Court of India ordered a \$470 million final settlement of all litigation with respect to the December 3, 1984 methyl isocyanate gas release at the Union Carbide India Limited ("UCIL") plant at Bhopal, India. The Corporation is a 50.9% shareholder of UCIL. The Union of India and Union Carbide Corporation accepted the Court's order. The Court stated that its order was just, equitable and reasonable based on the facts and circumstances of the case, including the pleadings, the data placed before the Court, the proceedings in the litigation in the United States, the settlement offers and counter-offers made by the parties, the complex issues of law and fact, the enormity of human suffering and the pressing urgency to provide immediate and substantial relief to the victims. The Court also quashed all criminal proceedings related to the gas release. Although the civil suit was filed by the Union of India against the Corporation alone, on February 15, 1989 the Supreme Court of India made UCIL a party to the suit. The Court directed that the Corporation pay \$425 million of the settlement and that UCIL pay the Rupee equivalent of \$45 million. The \$5 million payment previously made by the Corporation to the Red Cross at the suggestion of U.S. Judge John F. Keenan was credited to the Corporation, leaving a balance due of \$420 million. The Court specified that the \$470 million total be paid by March 23, 1989 to the Union of India for the benefit of all the victims of the gas release under the Bhopal Gas Leak Disaster (Processing of Claims) Act. Effective upon full payment of the settlement, the Court discharged the previous undertaking of the Corporation in the District Court at Bhopal to maintain

unencumbered assets having a fair market value of \$3 billion. The Supreme Court proceedings also provide that the accused in the criminal proceedings are deemed acquitted.

At the time the settlement occurred, all of the suits that were brought in the United States with respect to the gas release had been dismissed, except a civil suit in the state court in Connecticut. The settlement will be placed before the Connecticut court. Also, plaintiffs in a civil suit in the state court in Texas that was dismissed have attempted to appeal the dismissal. If the appellate process proceeds, the settlement will be placed before the appellate court.

The Corporation's accrued liability for the Bhopal litigation as of December 31, 1988, has been adjusted based upon the settlement resulting in a fourth quarter charge to *Other income-net* of \$48 million (\$58 million after tax or \$0.43 per share primary). At year-end 1988, the balance of the accrued liability was increased to \$237 million, after giving effect to anticipated proceeds of insurance and remaining expenses of the litigation.

In addition to the above, the Corporation and its consolidated subsidiaries are involved in a number of legal proceedings and claims with both private and governmental parties. These cover a wide range of matters including, but not limited to: trade regulation; product liability; utility regulation; Federal regulatory proceedings; health, safety, and environmental matters; patents and trademarks; contracts; taxes; and stockholder, rights-holder and debentureholder claims. In some of these cases, the remedies that may be sought or damages claimed are substantial.

While it is impossible at this time to determine with certainty the ultimate outcome of the litigation referred to in this note, management believes that adequate provisions have been made for probable losses with respect thereto and that such ultimate outcome, after provisions therefor, will not have a material adverse effect on the consolidated financial position of the Corporation. Should any losses be sustained in connection with any of the matters referred to in this note, in excess of provisions therefor, they will be charged to income in the future.



State Of Ohio Environmental Protection Agency

P.O. Box 1049, 361 East Broad St., Columbus, Ohio 43216-1049
(614) 466-8565



Richard F. Celeste, Governor

RE: Union Carbide Corporation

OHD 004167219

OHD 004167383

OHD 003926748

OHD 077479467

OHD 000821454

Mr. H. M. Parker
Assistant Director,
Environmental Affairs
Union Carbide Corporation
Old Ridgebury Road
Danbury, Connecticut 06817

July 28, 1986

Dear Mr. Parker:

I hereby acknowledge the receipt of a 1986 financial test demonstration. Ohio EPA has completed its review of Union Carbide's 1986 RCRA financial test submission. Union Carbide appears to adequately meet the financial test criteria at this time. Consequently, the facilities referenced above are in compliance with Ohio's financial responsibility rules for closure.

If you have any questions, please contact me at
(614) 462-8949.

Sincerely,

Edward A. Kitchen
Surveillance & Enforcement Section
Division of Solid & Hazardous
Waste Management

cc: Dave Sholtis, DSHWM
Albert R. Fritz, Union Carbide
D. A. Miekowski, Union Carbide
Edwin E. Frye, Union Carbide
R. L. Johnson, Union Carbide
R. C. Hazelton, Union Carbide
Dave Wertz, NEDO
Ben Chambers, NWDO
Steve Hamlin, SEDO

~~AKS 252 OHD 200 821 454~~
HAZARDOUS WASTE FACILITY CERTIFICATE OF LIABILITY INSURANCE

1. The International Insurance Company of Chicago, Illinois hereby certifies that it has issued liability insurance covering bodily injury and property damage to UNION CARBIDE CORPORATION of Chicago, Illinois in connection with the insured's obligation to demonstrate financial responsibility under 40 CFR 264.147 or 265.147. The coverage applies at Carbon Products Division - 11709 Madison Avenue, Lakewood, Ohio 44107
EPA Permit Number OHD-004167383

for non-sudden accidental occurrences.

The limits of liability are \$ 3,000,000. each occurrence and \$ 6,000,000. annual aggregate exclusive of legal defense costs. The coverage provided under policy number 560-000-116 issued on 11/1/82. The effective date of said policy is 11/1/82.

2. The Insurer further certifies the following with respect to the insurance described in Paragraph 1:

(a) Bankruptcy or insolvency of the insured shall not relieve the Insurer of its obligations under the policy.

(b) The Insurer is liable for the payment of amounts within any deductible applicable to the policy, with a right of reimbursement by the insured for any such payment made by the Insurer. This provision does not apply with respect to that amount of any deductible for which coverage is demonstrated as specified in 40 CFR 264.147(f) or 265.147(f).

(c) Whenever requested by a Regional Administrator of the U.S. Environmental Protection Agency (EPA), the Insurer agrees to furnish to the Regional Administrator a signed duplicate original of the policy and all endorsements.

(d) Cancellation of the insurance, whether by the Insurer or the insured, will be effective only upon written notice and only after the expiration of sixty (60) days after a copy of such written notice is received by the Regional Administrator(s) of the EPA Region(s) in which the facility(ies) is (are) located.

(e) Any other termination of the insurance will be effective only upon written notice and only after the expiration of thirty (30) days after a copy of such written notice is received by the Regional Administrator(s) of the EPA Region(s) in which the facility(ies) is (are) located.

I hereby certify that the wording of this instrument is identical to the wording specified in 40 CFR 264.151(j) as such regulation was constituted on the date first above written, and that the Insurer is licensed to transact the business of insurance, or eligible to provide insurance as an excess or surplus lines insurer, in one or more States.

Frank Kinnett
Frank Kinnett
(Authorized Representative)

International Insurance Company
% The London Agency, Inc.

P. O. Box 4985, Atlanta, GA 30302

CERTIFICATE ISSUED TO:

Regional Administrator
EPA Region 5
230 S. Dearborn
Chicago, IL 60604

Marsh & McLennan, Incorporated
1221 Avenue of the Americas
New York, New York 10020
Telephone 212 997-2000

February 27, 1986

RECEIVED

FEB 28 1986

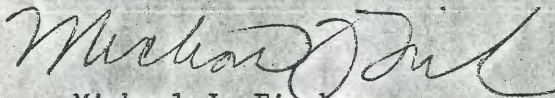
To Whom it May Concern:

Re: Union Carbide Corporation
Pollution Liability Insurance

We are pleased to enclose a Hazardous Waste Facility Liability Certificate in accordance with EPA regulations.

This certificate replaces the certificate on file with American Motorists which expired January 1, 1986.

Sincerely,



Michael J. Fischer
Assistant Vice President

MJF/sp

U.S. EPA
WASTE MANAGEMENT
OFFICE OF

Hazardous Waste Facility Certificate of Pollution Liability Insurance

1. Continental Insurance Company, (the "Insurer"), of 180 Maiden Lane, New York, New York 10038 hereby certifies that it has issued pollution liability insurance covering bodily injury and property damage to Union Carbide Corporation, (the "insured"), of Old Ridgebury Road, Danbury, CT 06817 in connection with the insured's obligation to demonstrate financial responsibility under 40 CFR 264.147 or 265.147. The coverage applies at:

<u>Location Name</u>	<u>Address</u>	<u>EPA I.D. #</u>
Films Packaging Division	Town Street Fostoria, OH 44830	OHD-004167219
Carbon Products Division	11709 Madison Avenue Lakewood, OH 44107	<u>OHD-004167383</u>
Electrode Systems Division	12900 Snow Road Parma, OH 44130	OHD-003926748
Specialty Polymers & Composites Division	Marietta, OH	OHD-077479467

For: sudden and nonsudden accidental occurrences.

The limits of liability are \$4,000,000 each occurrence and \$8,000,000 aggregate, exclusive of legal defense costs. The coverage is provided under policy number TBA, issued on 2/27/86. The effective date of said policy is 1/1/86.

2. The Insurer further certifies the following with respect to the insurance described in Paragraph 1:
- (a) Bankruptcy or insolvency of the insured shall not relieve the Insurer of its obligations under the policy.



OHD 004 167 383
TBE
1230 W. Peachtree St., N. W.
P. O. Box 4965
Atlanta, Georgia 30302
(404) 875-9541
Telex 34-2445
TWX 810 751-3329

March 23, 1983

Regional Administrator
Environmental Protection Agency
Region V
230 S. Dearborn
Chicago, IL 60604

ADDITIONAL INFORMATION
IS FILED WITH
OHD 000 821 454

Gentlemen:

Hazardous Waste Facility
Certificate of Liability Insurance
Union Carbide Corporation
EPA #OHD-000821470, ILD-005152954, OHD-000821454
ILD-000821462, OHD-077479467, OHD-00821454,
IND-077001147, OHD-000821462, OHD-004167219,
OHD-004167383, OHD-003926748, IND-000708545

In accordance with the terms of the Hazardous Waste Facility Certificate of Liability Insurance which we recently issued to your office, we are hereby notifying you of the expiration of this contract on April 30, 1983, in accordance with the provisions of Item 2 (e).

To assist you in matching up this notification with the original certification which was sent to you, I am enclosing a copy of the original certificate which we executed.

We feel that it is likely that this insured will purchase another policy at the renewal date but, because the renewal negotiation process has not been completed, we have no option but to give you the required advance notice of expiration of our coverage on April 30, 1983.

If renewal negotiations are satisfactorily completed, we will provide new certificates.

Sincerely,

Frank Kinnett

Frank Kinnett
Vice President
International Insurance Company

bmi

Enc.